Cape Peninsula
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VALIDATION OF AN ORGANISATIONAL STRUCTURE DESIGN TO ENSURE AN EFFECTIVE QUALITY MANAGEMENT SYSTEM WITHIN THE FOOD INDUSTRY IN SOUTH AFRICA

Dissertation

By

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DECLARATION

I, **Charlene Jardine**, hereby declare that the contents of this dissertation submitted for the degree Master of Engineering in Quality at the Cape Peninsula University of Technology, represent my own original unaided work, which excludes contributions in the form of guidance from subject matter experts and my supervisor. The dissertation, furthermore, has not previously been submitted to any other institution of higher education towards any qualification. I further declare that all sources cited or quoted are indicated and acknowledged by means of a comprehensive list of references. Furthermore, the dissertation represents my own opinions and not necessarily those of the Cape Peninsula University of Technology.

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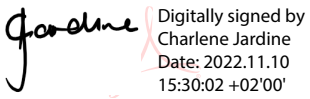
Signature: 

Date: 10 November 2022

DEDICATION

This study is dedicated to my dearest and beloved late father, Brian Franklin Roelf, my mother, Galiema Yvonne Roelf, and my husband, Sergio Andre Jardine, for their patience, support and love.

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All honour goes to God for giving me the strength, wisdom, courage, health and capacity, including the financial capacity, to complete this study and dissertation. God has shown me the path and guided me on this journey.

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ABSTRACT

This research study was conducted within the food safety and quality management sections in the food and packaging manufacturing companies in the Western Cape, South Africa. The study focused on the effectiveness of a quality management system (QMS) within an organisation and how it could add value to not only product quality but also process improvement initiatives and, more importantly, the effectiveness of the business and customer relationships, with a key focus on a well-established organisational structure.

For this research, more than 40 distinct food and packaging production enterprises received a survey questionnaire through electronic means. The key finding of this study was that all the companies agreed that organisational structure has an influence on corporate performance. With a 97% positive response rate, the 31 participants agreed that a good and effective QMS system reduces waste, improves process control and product quality, increases market share, lowers costs, facilitates training, meets customer requirements and meets expectations within the organisation – and that organisational structure is an important component of this.

The study's primary conclusion was that there is a definite correlation that prerequisite programmes (PRPs) and goods manufacturing practices (GMPs) utilised by a corporation have a favourable influence on organisational performance and QMS compliance. There was a 94% consensus that the basis of GMPs/PRPs can instil a quality discipline and culture into the manufacturing process. The major goal was to find the most suitable organisational structure within the food business; however, the data provided by the respondents was not comprehensive enough to establish the ideal organisational structure within South Africa. During the poll, quality representatives stated that they were unclear about, and did not recognise or comprehend the pertinent terminology: centralised, decentralised and hybrid approach. It is critical for quality management to comprehend this

terminology; thus, the advice is to conduct a follow-up survey and discuss the various forms of organisational structure design.

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GLOSSARY

BRC: British Retail Consortium (BRC) Global Standards, the world's first GFSI-recognised standard, is one of the choices for retailers worldwide looking for confidence from food suppliers.

FSSC/FS 22000: Food Safety System Certification standard is the latest certification scheme for food manufacturers. The scheme is based on the integration of ISO 22000:2005 Food Safety Management Systems (FSMS) standard and has been fully approved by the Global Food Safety Initiative (GFSI).

GFSI: Under the umbrella of this Global Food Safety Initiative, seven major retailers have come to a common acceptance of four GFSI benchmarked food safety schemes.

HACCP: Hazard Analysis and Critical Control Points is a risk management system that identifies, evaluates and controls hazards related to food safety throughout the food supply chain.

IFS: International Food Standard is a quality and food safety standard for retailer- (and wholesaler-) branded food items designed to examine a supplier's food safety and quality systems using a consistent approach that harmonises the aspects of each system.

QMS: Quality Management System: ISO 9001, an international standard that defines the requirements for a quality management system, is used by organisations to demonstrate their capacity to consistently deliver products and services that fulfil consumer and regulatory requirements.

SQFI: Safe Quality Food Institute, one of the world's premier food safety and quality management systems, was created to satisfy the needs of retailers and suppliers all over the world. The programme ensures that a supplier's food safety and quality management system conforms with international and domestic food safety regulations.

TQM: Total Quality Management system is a strategy that directs an organisation's efforts toward continuously enhancing its capacity to provide high-quality products and services to its customers.

VALIDATION: The action of checking or proving the validity or accuracy of something.

PRP: Prerequisite Programs is basic conditions and activities that are necessary within the organisation and throughout the food chain to maintain food safety. These programs and practices are put in place to address the role the production environment plays in producing safe food products. ISO 22000 requires that the organisation establishes PRP programs to control the likelihood of introducing contamination through the work environment.
Examples of equivalent terms for PRPs are: good agricultural practices (GAP), good veterinary practice (GVP), **good manufacturing practice (GMP)**, good hygiene practice (GHP), good production practice (GPP), good distribution practice (GDP) and good trading practice (GTP)

GMP: Good Manufacturing practices is a system for ensuring that products are consistently produced and controlled accordingly to quality standards. It is designed to minimize the risks involved in any production that cannot be eliminated through testing the final product.

CHAPTER 1
SCOPE OF THE RESEARCH

1.1 Introduction and background

This report outlines studies undertaken in the South African (SA) food and packaging manufacturing industry to better understand the influence of organisational structure on company performance and quality, with a particular emphasis on Western Cape manufacturing companies. The impact of organisational structure on organisational performance and quality management systems was investigated in food and packaging companies.

This research enables food manufacturing businesses in South Africa (specifically in the Western Cape) to examine and comprehend how their existing organisational structure influences their company's quality and food safety management system and team. This also gives organisations an overview of the best organisational structure for their purposes, as well as the impact this structure may have on quality and organisational effectiveness.

1.1.1 Organisational structure in the food and packaging manufacturing industry

Within the food production business, the reporting structures are not always apparent as to whom the quality and food safety department should report. The quality department may report directly to the CEO or managing director in some businesses. In other circumstances, the quality department reports to operations, supply chain or product development. The existing quality and food management system within the food sector varies from business to business due to the variety of corporate scopes. The manner in which an organisational structure is formed and managed has the potential to have a direct influence on business productivity (Root, 2018). During food production audits, one of the first items reviewed is the company's organisational hierarchy. The organisational chart frequently displays

operational dysfunctions, indicating that the company's reporting structure are currently not delivering value (Anjoran, 2014:1). In the production facility, the quality and food safety team does not always have the right to reject or stop deviations. The question therefore becomes, how significant are the reporting structures of a company's quality management and food safety team? According to Markgraff (2018:1), quality assurance principles necessitate an organisational structure that explicitly links quality responsibility to the executive level of the business. A corporation that lacks a formal structure confuses employees about who is responsible for what in the organisation, which can then influence product quality and organisational performance. According to research in the field of organisational structure and behaviour, organisational structures are one of the most significant elements determining organisational efficiency, presently and in the past (Estalaki, 2017:1).

This research examines the link between a company's quality management system and its performance. Several quality management (QM) practices must be followed to increase organisational performance and customer satisfaction (Al-Qahtani, Alshehri & Abdaziz, 2015:1).

1.2 Statement of the research problem

The research problem reads as follows: The food safety and quality management team does not always have the support of senior management to reject and eliminate deviations within the operational system. As a result, this can lead to poor quality product, low productivity, increased waste, dissatisfied customers, an increase in customer complaints and a reduction in profit, thus affecting staff morale and behaviour towards the QMS.

1.3 Research question

1.3.1 Primary research question

The research question to be investigated is as follows: How does the organisational structure adopted within a Food Safety Management System (FSMS) affect compliance to QMS and organisational performance within the South African food industry?

1.3.2 Investigative research questions

- Which organisational structures are commonly adopted within the Food Safety Management System (FSMS) in South Africa?
- Which quality management systems are adopted within the South African food industry?
- Which prerequisite programmes (PRPs) and goods manufacturing practices (GMPs) define compliance to the identified Quality Management System in the South African food industry?
- Do the PRPs/GMPs employed by a company have an impact on organisational performance with regards to quality?
- If a relationship exists (i.e., if a clear correlation is discovered in response to the previous question), which organisational structure is the best for companies within the South African food industry with regards to compliance to QMS and organisational performance?

1.4 Primary research objectives

The primary research objectives are as follows:

- to determine the organisational structures commonly adopted within the Food Safety Management System (FSMS) in South Africa;
- to identify the quality management systems adopted within the South African Food manufacturing industry;
- to determine the operational practices (PRPs/GMPs) which define compliance to the identified QMS;
- to determine if a relationship exists between specific operational practices (PRPs/GMPs) and compliance to QMS; and
- to identify the best organisational structure for effective organisational performance.

1.5 Research process

The research process is a set of scientific steps that must be accomplished before conducting research. Each step is connected to the ones preceding it. The research process explains the *how* of conducting research, from developing the study idea through submitting the short 'in company'

research report. The procedure begins with the research problem. Then, in a logical order, it advances to the next level. Likewise, a research proposal is necessary for the majority of research activity.

In general, there are two types of research: quantitative and qualitative. The process of collecting and analysing numerical data is known as quantitative research. It can be used to find patterns and averages, make predictions, confirm causal relationships and generalise results to bigger populations. Quantitative research, on the other hand, is the inverse of qualitative research, involving the collection and interpretation of non-numerical data (e.g., text, video or audio).

The positivist research paradigm typically employs quantitative research methodologies, whereas the interpretivist research paradigm employs qualitative research methods (Cavana, Delahaye & Sekaran, 2000). Quantitative research is a method that involves the collection of numerical data, a logical grasp of the relationship between theory and study, a preference for a natural science approach (particularly positivism), and an objectivist perspective of social reality. It is critical to note that quantitative research entails more than simply quantifying aspects of social life; it also has a distinct epistemological and ontological perspective that distinguishes it from more qualitative research (Hossain, 2011).

According to Kumar (2005), qualitative and quantitative research procedures differ in their philosophy of inquiry as well as, to some extent, in the methods, models and processes used. Creswell (2002) presents an eight-step research model distinguishing the characteristics of these processes as qualitative and quantitative approaches.

Table 1.1: Qualitative style vs quantitative style (Hossain, 2011)

QUANTITATIVE STYLE	QUALITATIVE STYLE
Measure objective facts	Construct social reality, cultural meaning
Focus on variables	Focus on interactive processes, events
Reliability is key	Authenticity is key
Value free	Values are present and explicit
Independent of context	Situationally constrained
Many cases, subjects	Few cases, subjects
Statistical analysis	Thematic analysis
Researcher is detached	Researcher is involved

This research process follows the eight-step module of Kumar (2005), namely:

- formulating a research problem;
- conceptualising a research design;
- building a data collection instrument;
- selecting a sample;
- writing a research proposal;
- collecting data;
- processing data; and
- writing a planned study or research report.

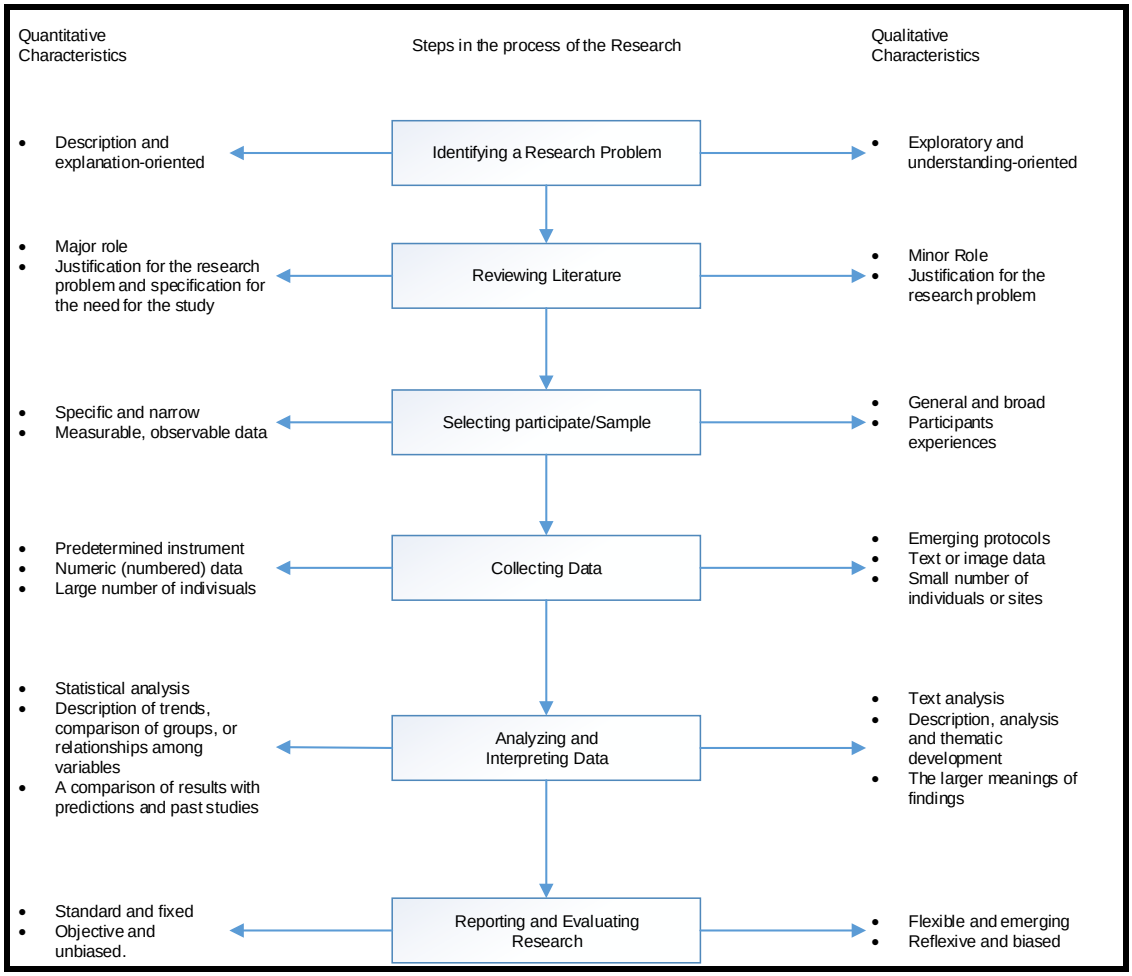


Figure 1.1: Eight-step research model differentiating qualitative and quantitative approaches (Hossain, 2011)

This research study's approach was adopted from Welman, Kruger and Mitchell (2005:52). This study was organised and carried out as follows:

- identifying the research topic (identification and clear formulation of the specific problem to be investigated);
- collecting the research data;
- putting together the topic approval for submission and approval;
- defining research questions and establishing study objectives;
- reviewing the literature;
- choosing how to carry out the research (creating a research plan);
- creating and submitting a study proposal for approval;
- seeking permission from the food and packaging industries; and
- analysing and interpreting study data and literature.

From the beginning to the end of the research procedure, the research study was produced and presented to a research supervisor for intermediate evaluative feedback. Finally, the final report was submitted for review and approval.

1.6 Significance of the proposed research

This research provides a framework and guidelines for the creation of organisational structures to improve South African food businesses, particularly those in the Western Cape. Benefits include the following:

- The study provides guidance on organisational structure alternatives to manufacturers. This is essential in running a successful and high-quality business.
- This research provides businesses with a better awareness of the critical functions of the quality department within the organisation and how it may benefit the organisation, as below:
    - It reduces deviations (internal and external).
    - It reduces damages.
    - It increases profit with good cost-to-quality.
    - It ensures that food products are of excellent quality.

1.7 Chapter and content outline

The chapter content and analyses has been adopted from Mouton (2001:122-125) and have been captured as follows:

- *CHAPTER 1: INTRODUCTION*

This chapter identifies the research problem and provides the necessary motivation for the study.

- *CHAPTER 2: HOLISTIC OVERVIEW OF THE RESEARCH ENVIRONMENT*

This chapter contextualises the environment in which the research problem has been identified and provides the supporting information to promote the need for the research.

- *CHAPTER 3: LITERATURE REVIEW*

In this particular chapter, the available and applicable literature is extensively reviewed and systematically presented to provide a re-constructed framework for the structure and guidelines for performing the proposed research study.

- *CHAPTER 4: RESEARCH DESIGN AND METHODOLOGY*

In this chapter, the researcher provides the detailed methodology that will be adopted; explains the research instruments; and identifies measurements and key variables to be used for the proposed study. Details of data collection and methods as well as data analysis are also included.

- *CHAPTER 5: DATA ANALYSIS AND INTERPRETATION OF RESULTS*

The content of this chapter is the culmination of all the results gathered as part of the research study. The results shall be presented, discussed and interpreted, with clarity given as needed.

- *CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS*

The researcher presents the findings of the study along with any pertinent points and ideas. As part of the conclusion, the researcher may include recommendations for further study related to the research topic.

1.8 Chapter summary

This chapter highlighted and explained the major components that contribute to the impact of organisational structure on company performance and quality in the food and packaging industries. It also includes the problem description, reasons, and benefits of researching the problem to clarify the relationship between organisational structure and company performance and quality. It serves as the research introduction chapter, outlining the problem to be investigated and how the findings will be analysed.

CHAPTER 2

HOLISTIC OVERVIEW OF THE RESEARCH ENVIRONMENT

2.1 Food safety and quality management systems within the food industry

2.1.1 Introduction

The food manufacturing and packaging industry works with sensitive items. As a result, maintaining quality standards and adhering to quality regulations is critical for the food manufacturing business (Fuller, 2007:1). Product safety is recognised as the most significant component of food quality; thus, food safety and quality are fundamental principles in the food industry. Consequently, organisations are becoming increasingly active in quality initiatives aimed at improving the quality of processes and products (Psomas & Fotopoulos, 2009:2).

Adopting a Food Safety Management System (FSMS) provides food enterprises with the market stability and competitiveness they require (Filipovi *et al.,* 2008). South Africa's (SA) Food Safety and Quality Management System and Regulations include, but are not limited to, the following private certification bodies: FSSC 22000, ISO 22000, BRC, SQF, HACCP, IFS, GFSI, and Global GAP (refer to Glossary).

To oversee the manufacturing process, most food manufacturing businesses use prerequisite programmes (PRPs) (also known as good manufacturing practices [GMPs]) (Mayes & Motimore, 2001). PRPs are utilised as a guideline in the food manufacturing industry and serve as the foundation for any FSMS. As a consequence, PRPs aid in the development of quality and dependability within an organisation. A comprehensive and thorough precursor programme is required for the successful implementation of the food safety system (Fuller, 2007:1).

2.1.2 Background

The Listeria epidemic, which occurred between November 2017 and May 2018, resulted in South Africa's first and largest national recall event, killing over 180 people (Korsten, 2018: Online). Because of the Listeria epidemic, South African consumers are questioning the present food safety and quality norms and recommendations (*Health & Wellness*, 2018:1). This incident has raised doubts about current SA food safety norms. Because the legislation governing the administration of food safety requirements was out of date, the SA food regulation was not prepared (Korsten, 2018: Online). This meant that the food safety mechanisms specified by the SA rule were deemed insufficient. This also entails identifying and validating potential issues (Korsten, 2018: Online). According to Korsten (2018: Online), SA suffers from a significant deficit of regulations, inspectors, laboratory personnel, scientists, and auditors.

Consumers and food companies alike were concerned about how this epidemic could have been avoided. Concerns were also expressed about who should be held accountable for food safety in a food and packaging manufacturing company. These kinds of concerns can only be addressed by businesses, as a corporation's organisational structure should foster accountability and responsibility for food safety and quality within the company. The existing South African food legislation makes no provision for the precise duties of the person responsible for a food establishment's food safety (Korsten, 2018:1). The guideline relating to *Regulations governing general hygiene requirements for food premises, the transport of food and related matters* (R962, changed to R638), formerly did not rule on the obligations and accountability for the person who should be accountable for food safety and quality of a premises. This regulation was revised and published in June 2018, with a specific mention on page 21 for *Duties of person in charge of food premises,* which now states that a business's top management must take responsibility and accountability for food safety, and must be trained and competent in food safety and quality standards by an accredited training company (South Africa, 2018:21). As a result, it is critical

for the food and packaging manufacturing industry to have a clear grasp of the scope of work as well as the organisational accountability.

The senior executive of a corporation is responsible for outlining the organisational reporting structure that defines each job with responsibility for food safety and quality. If top management does not grasp their role in the QA process, the QA department, and thus the organisation, will suffer. (SQF, section 2.1.2.1).

2.2 Quality and food safety management systems adopted by South Africa food industry

To ensure that facilities are clean and food is safe, all enterprises providing food or drink to the public must follow the food regulations. Both the Health Act No. 63 of 1977 and the Foodstuffs, Cosmetics, and Disinfectants Act 1972 have specific food rules. In addition, private food safety guidelines have been developed to help food service enterprises provide safe food for human consumption (Fuller, 2007). Certification bodies own a set of worldwide food safety standards that have been adopted by South Africa's food and packaging producing companies. These standards and guidelines include the British Retail Consortium (BRC), the Hazard Analysis and Critical Control Point (HACCP), Safe Quality Food (SQF), ISO 22000:2005, FSSC 22000, GFSI, International Food Standard (IFS), GLOBAL GAP, which has been implemented as Food Safety Management System (FSMS), and ISO 9001 (QMS) which are approved standards (Trienekens & Zuurbier, 2008:111-115).

Psomas and Fotopoulus (2009:2, citing van der Spiegel *et al.,* 2005, 2007) explain that the food manufacturing industry uses three internationally recognised quality assurance (QA) systems to ensure quality: hazard analysis critical control point (HACCP), International Organisation for Standardisation (ISO), and British Retail Consortium (BRC). Various ISO certification standards have been created over the years for food manufacturing industries to comply with. This is also a customer

requirement for the majority of food industries. Several FSMS and QMS (TQM) are used in South Africa to ensure that food safety and quality legislation are followed within the food business (*Regulation of food safety and quality,* 2019). The following national departments are primarily responsible for food legislation, and all food manufacturers must adhere to and comply with these standards and regulations:

- *Department of Agriculture:* The Department of Agriculture controls the safety and quality of agricultural and animal products in terms of the Agricultural Product Standards Act, 1990.
- *Department of Health:* According to the Foodstuffs, Cosmetics, and Disinfectants Act of 1972, the Department of Health requires that all foodstuffs be safe for human consumption (FCD Act).
- *Department of Trade and Industry:* The South African Bureau of Standards (SABS), reporting to the Department of Trade and Industry, is in charge of several food standards under the Standards Act of 1993.
- *Foodstuffs, Cosmetics and Disinfectant Act (FCD Act):* This is considered a reactive Act, which implies that permitted and accepted sources are used to provide information on food safety for regulatory reasons (*Regulation of food safety and quality;* FACS, 2016).
- *Environmental health regulations:* Before a company can begin trading, the company must obtain a certificate (valid for one year) from a certifying body.
    - According to these regulations, the person in charge or owner of all locations where food is handled, whether health food or fast food, must obtain a "Certificate of Acceptability" (ExpertHub, 2009).

The above regulations, actions and recommendations are mandatory specifications that South African food manufacturers must implement and maintain. Food safety and quality standards, on the other hand, are voluntary and often implemented in response to client requests.

With the recent Listeria incident, food microbiology and safety specialist Dr Lucia Anelich underlined that South African food industry adhere to a number of food safety management guidelines. She stated that these standards are based on a “hazard analysis and critical control points (HACCP) system”, but unlike in many other countries, they are not legally required or enforced in South Africa (*Health & Wellness,* 2018:1). This is one of the key shortcomings in the South African food industry, as food manufacturing companies can circumvent food guidelines, putting consumers at danger and altering product quality and safety. There is no legal requirement to establish a QA standard or to be ISO 9001 certified (Psomas & Fotopoulus, 2009:14). Jones writes in an essay, "Countries that have implemented such legislation and industry regulation have seen a huge drop in the number, and severity, of outbreaks" (*Health & Wellness,* 2018:1).

2.3 Importance of a quality management system (QMS)

A strong quality management system serves as the foundation of a quality organisation, and even if a small business lacks the resources to engage in quality management, it may still be done effectively (Killburn, 2015: Online). A quality management system (QMS) is a systematic procedure that is used to assess a company's operations, goods and services to identify areas that may require quality improvement (Killburn, 2015: Online).

ISO 9001 is a quality management system used in industries to ensure that quality requirements are met in accordance with international standards. Consumers believe that organisations who are ISO certified are capable of offering high-quality items that fulfil their needs (Lamprecht, 1993). Companies with ISO 9001 certification benefit from a variety of advantages, including increased product quality, increased customer satisfaction, reduced waste, recall prevention, product quality and reliability, increased customer satisfaction, increased company income and continuous system improvement through monitoring (Ngwa, 2017). A good quality management system will, according to Killburn (2015: Online), reduce

waste, improve process control, gain market share, minimise costs, promote training, satisfy customer expectations and boost morale.

Because most South African food businesses have adopted an FSMS rather than a QMS (e.g., ISO 9001), quality tools are not always used when an FSMS is established. According to Psomas and Fotopoulus (2009:2, quoting Beardsell & Dale, 1999), TQM is the least commonly utilised quality system in food and distribution industries.

2.4 Benefits of QMS

According to Al-Qahtani, Alshehri and Abdaziz (2015:1), TQM is a managerial approach that aims to increase organisational performance and efficiency by enhancing the quality of services and goods (citing Arumugam *et al.,* 2008). According to a journal paper on the advantages of TQM, implementing numerous quality initiatives at organisations can boost customer satisfaction as well as product and service quality performance (Al-Qahtani *et al.,* 2015:3).

Improve customer satisfaction: A quality management system (QMS) effectively assists in identifying problems before they cost the company consumers, and then correcting or taking action to solve whatever the problem is (Sykes, 2017:1).

Identify problems faster: A quality management system (QMS) efficiently helps to spot problems before they cost the company customers, and then correct or take action to rectify whatever it is (Sykes, 2017:1).

Create a culture of continuous improvement: Companies that embrace this culture will realise efficiencies and cost savings, including the use of systematic processes when problems develop to reduce the impact of the problem and hasten recovery (Smit, 2018:1).

Engage employees: Employees who participate in process improvement report increased levels of engagement and morale. Engaged employees are more productive, benefitting the company by improving process quality (Smit, 2018:1).

2.5 Management commitment: top management

"If your management is not on board, you have to either get them on board, resign and find another job, or find a means to account for your time", a consultant has claimed at a seminar (Goffin & Szwejczewski, 1996).

Strong commitment from top management is crucial in quality management and leads to higher quality performance. Senior management drives TQM adoption by creating values, goals and processes to fulfil the needs and expectations of customers while also enhancing organisational performance (Jaafreh, 2013).

2.6 Relationship between TQM and organisation performance

According to Das *et al.* (2006), there is a positive relationship between TQM implementation and organisational performance, with five TQM principles – customer focus, continuous improvement, top management commitment, employee involvement and product innovation – having a significant positive effect on product quality (Al-Damen, 2017). Al-Damen proposed that staff be rewarded for their contributions to TQM efforts (2017).

All managerial approaches believe performance measurement to be a crucial component. TQM approaches have a direct impact on the two most important indicators of organisational performance: cost and quality (Abd. Aziz, 2015). TQM methods directly contribute to enhancing organisational performance by decreasing expenses, improving employee performance, and increasing customer satisfaction, according to Al-Qahtani, Alshehri and Abdaziz (2015:1, citing Lakhal *et al.,* 2002). A quality management system, according to Gharakhani, is influenced by organisational success in terms of financial performance (Al-Qahtani *et al.*, 2015:1, citing Gharakhani *et al.,* 2013). Because of the escalating demand for high-quality products and

services, organisations have recognised the need to adopt comprehensive quality management principles into manufacturing processes to cut costs and generate products with high-quality features (Al-Qahtani *et al.,* 2015:1, citing Harmon & Peterson, 1990).

According to research conducted by the American Society for Quality (ASQ), the optimal quality management organisational structure incorporates quality management concepts and practices that contribute to the maximisation of organisational results (Barros, 2014). According to the ASQ study's literature analysis, the most common QMPPs provided a conceptual model that linked QMPPs to enterprise quality performance.

Figure 2.1: Conceptual model: relationship between QMPPs and their impact in organisations quality performance (Barros, 2014)

2.7 Prerequisite programmes (PRPs)/good manufacturing practices (GMPs) which define compliance to the food safety and QMS in the South African food industry

Chaloner-Larsson, Anderson, Egan, Da Fonseca Costa Filho, and Gomez Herrera (1997:6) define good manufacturing practices (GMP) as a segment of quality assurance that ensures food products are uniformly manufactured and carefully controlled in accordance with the quality standards appropriate for their use and as expected by the marketing authorisation (Ngwa, 2017). GMPs are overarching guidelines established to prevent food safety hazards at the plant level (Sauer, 2005). The essential operational and

environmental conditions required for the manufacture of safe foods are known as good manufacturing practices (GMPs). The combination of GMPs/PRPs ensure that ingredients, products and packaging materials are handled correctly and that food is processed in an appropriate environment. GMPs address the dangers to workers and the environment during food production. They are the foundation of any food safety system. Following the introduction of GMPs, processors can construct a Hazard Analysis Critical Control Point (HACCP) system to control risks that may impact ingredients and packaging material during food processing. GMPs also serve as guidelines for the safe and proper functioning of any process and can be utilised as prerequisites for other quality initiatives (Sauer, 2005).

Many food processing organisations have used the GMP certification scheme as the foundation for creating and implementing other quality and food safety management systems such as HACCP, ISO 22000, SQF and ISO 9001 (Ngwa, 2017).

2.8 GMPs/PRPs in the food manufacturing industry

According to Sauer and Schrader, GMPs are the foundation for food safety measures (2011). In the United States, the Food and Drug Administration (FDA) enforces good manufacturing practices (GMP) on the food manufacturing industry (FDA). Sanitation, food safety, Hazard Analysis Critical Control Points (HACCP) and maintenance are all integral GMP processes to ensure that the facility produces excellent products that are safe for consumption while also protecting employee safety.

GMP is frequently used to refer to recalls that could have been avoided if proper GMPs had been in place (Velasquez, 2007). It has also been proposed that properly implementing GMPs can help an organisation prosper by minimising waste, increasing employee commitment and assisting in selling itself as a more desirable supplier (Velasquez, 2007). A company can save money by implementing proper controls and systems that reduce product waste (Sauer & Schrader, 2011). According to Laird, Holton and Naquin (2003:6), training employees in the GMP/PRP

programmes implemented makes them feel more important to the process and inspires them to pay more attention to detail. As a result, other components of the programme, such as waste reduction, benefit from activities completed correctly the first time. Companies can expect greater results by eliminating waste and increasing employee dedication. GMPs contribute to promising food quality outcomes such as compliance (Ngwa, 2017).

2.9 Do PRPs/GMPs that are employed by a company have an impact on organisational performance with regards to quality?

A solid GMP programme adds structure to a company's or facility's quality system, which aids in the manufacturing of a safe product. This structure has the potential to be extremely useful in decreasing or preventing negative or unpleasant events, such as product recalls. A product recall can be devastating for any company because it causes product waste and, as a result, sales loss (Sauer, 2005). According to the FDA Recall Report, US corporations were involved in slightly more than 1,100 GMP-related recalls from 1999 to 2003. In this study, the phrase "GMP-related" refers to problems that could have been avoided with GMP-type preventive measures such as proper equipment sanitation, adequate personnel training, product label review and proper preventive maintenance of equipment (Sauer, 2005).

GMP-related recalls cost the US food industry around $400 million (R5 974 264 000.00) each year between 1999 and 2003. This statistic alone should convince the industry that strict GMPs are essential for avoiding costs and unwanted publicity (Sauer, 2005). But there are even more compelling reasons to deploy the most effective GMP programme available for use in a food processing business. Effective GMPs provide the advantage of lowering customer or consumer complaints and liability expenses.

GMPs can also boost profitability in a variety of different ways. An efficient GMP programme can lay the groundwork for establishing quality in all industrial processes. Standard operating procedures for sanitation

(SSOPs), formalised sanitation tracking and statistical process control (SPC) are just a few of the instruments that can be used as part of the GMP programme, which can also be connected with other components of the quality programme (Sauer, 2005). GMPs also promote employee engagement, attention to detail and overall consistency, enabling organisations to decrease or eliminate contamination, mistakes and other errors. Comprehensive 'cost of poor quality' (CPQ) performance measures can assist companies to measure the tangibility of their GMP programmes. A simple calculation can quickly evaluate how well personnel are implementing the GMP programme: CPQ = cost of disgruntled customers, waste cost, waste location cost and waste prevention cost (Sauer, 2005). An effective GMP programme is a valuable company investment.

2.10 Benefits of the implementation of PRPs/GMPs

GMP benefits include fewer operating expenses for rework, customer rejects and complaints, as well as increased efficiencies and product acceptance. According to Mensah *et al.* (2012:6322) and Fotopoulos, GMP compliance can lead to increased customer satisfaction, fewer customer complaints, improved internal procedures and competencies and improved product quality. GMP compliance as the foundation of an FSMS can improve the prospect of trade in other countries, reduce operating costs and increase profit margins.

GMPs, initially created by the government to prevent product safety defects, are more than just a collection of standards to follow; they are a critical component of every company's investment in food safety and quality. A successful programme can improve a company's end result by lowering expenses and increasing production. Effective implementation necessitates top-level commitment that spreads throughout the organisation. It necessitates holding everyone accountable. It necessitates perseverance and continuous improvement (Sauer, 2005). Because of the multiple benefits of GMP, it is vital for food manufacturers to follow GMP rules without sacrificing quality.

2.11 Conclusion

This chapter has offered an overview of GMP/PRP in the food industry, as well as an outline of the numerous regulatory organisations that oversee the South African food business.

The Global Food Safety Initiative (GFSI) strategy has resulted in a number of food safety standards that the food sector can utilise to implement and offer safe products. These are private, voluntary certification programmes. GMPs serve as the foundation for any FSMS and must be in place prior to applying these certification techniques. Despite the fact that South Africa has numerous private certification standards in place – such as HACCP, the International Organisation for Standardisation, Safe Quality Food, the British Retail Consortium's Global Food Safety Standard, the International Food Standard and the Quality Management System – the South African regulatory body does not yet enforce their implementation.

CHAPTER 3

LITERATURE REVIEW

3.1 Organisational structure within the food and packaging industry

The literature review focuses on the relationships, if any, between organisational structures that may influence quality or company performance. Organisational performance and quality are variables that are based on organisational structure and must be projected and measured in a variety of ways. The literature addresses the performance standards for businesses.

3.1.1 Introduction

A company's behaviour can be influenced by its organisational structure through at least two channels: company structure and company performance. A company's structure influences key performance measures such as profitability and productivity, which can promote innovation. These performance characteristics have the potential to influence behaviour (DeCanio, Dibble & Amir-Atef, 2000:1285-1299). The number of people who have put their efforts into the organisation, particularly the organisational structure, determines its success or failure (Estalaki, 2017:1). After developing a food safety policy, the second stage in establishing a food safety management system to meet the requirements of any food safety standard would be to create an organisational structure to maintain an effective food safety management system. Businesses frequently inquire how the food safety and quality management structure should look in a typical organisation, such as roles, responsibilities and competency requirements from the top down. The quality structure of an organisation has a considerable impact on the success of quality management. Quality can be structured in a variety of ways, including centralised, decentralised and hybrid models. The organisation of a manufacturing plant is determined by the nature of the firm (Markgraff, 2018:1). Short runs of high-quality customised products, for example, necessitate a different focus than large

batches of standard products. Regardless of these distinctions, the organisational structure must meet both basic manufacturing requirements and common operating functions. When an organisation meets these basic needs, its performance improves. The capacity to manage the quality of its goods and processes is one of the most essential success factors for any organisation. Strategies are regularly updated and improved to make the best use of people, processes and technology (Shah, 2013:1).

3.2 Organisational structures commonly adopted by FSMS in South Africa

Articles in South African journals, newspapers and other publications could not be used to conduct research on the organisational reporting structure of a quality management system within a food manufacturing industry. The following food safety and quality standards (FSSC 22000, SQF, IFSQN and HACCP) do not stipulate or regulate on specific reporting structures that need to be followed within a business. The ISO 9001 (QMS) standard does not necessitate the creation of an organisational chart it simply requests the description and communication of authority lines (Anjoran, 2014:1). The GFSI (SQF) food safety standard and the pharmaceutical standard are the two sources that govern the reporting structure of a quality management team. According to the above two standards, quality should be reported to senior management and have authority over any deviations practiced in the manufacturing industry. The aforementioned regulations are not currently followed by the South African food sector or international food manufacturing industries. Quality assurance standards, according to Markgraff (2019:1), necessitate an organisational structure that can clearly link quality responsibility to the company's leadership level. In large corporations, these criteria can be met by employing a quality assurance manager who reports to the CEO (Markgraff, 2019:1). The organisational structure must also provide direct organisational channels into each department for the QA manager. These requirements can be met in smaller businesses by delegating QA tasks to someone in management, empowering him to handle QA matters throughout the organisation, and

building a QA reporting path to the executive level (Markgraff, 2019:1). according to an article in the Organizational Chart Template (2018:1), The primary purpose of an organisation's quality department, according to Rosie (2018: Online) is quality management. It is focused not just with product and service quality, but also with how to obtain it. As long as the organisation follows and complies with the food safety standard clause, *Management Commitment*, there should be no reason the quality function cannot be part of a different department or function, such as engineering or operations.

It is vital to pay attention to building a company's organisational structure when starting a new business because it serves as the company's backbone (Sun, s.a.). This should be done in accordance with the size, industry and aims of the organisation. The organisational structure of a company should be seen as internal communication flowcharts. Poorly structured organisational structures will result in passive, ineffective communication in which managers at all levels are expected to communicate information (Sun, s.a.).

The purpose of choosing an organisational structure is to identify connections, power structures and communication systems that are best suited to the unique organisation or industry. Although certain recommendations may be helpful, there are no hard and fast rules for deciding which structure is appropriate for every individual organisation (Gleeson, 2019: Online). Because there is currently no literature on this topic, this research will be undertaken through primary research within the Western Cape food and packaging manufacturing industry.

3.3 Roles and responsibilities

Leadership at all levels and across boundaries is crucial to creating an atmosphere within an organisation that encourages long-term transformation and continual progress (Douma, 2015:15). Creating a culture and organisational structure that promote patient safety and excellent outcomes necessitates shared accountability and collaboration within organisations (Douma, 2015:15). The goal of selecting a certain

organisational structure is to define relationships, lines of power and communication methods that are best suited to the individual organisation or industry. According to Johnson (2019: Online), the key to running a successful and orderly firm is an organisation. The article also stated that each employee should clearly understand his or her role within the organisation and be aware of and comfortable with the chain of command. According to Danzfuss (2012:1), virtual team integration into the organisational context is crucial for team performance (Hertel, Geiser & Konradt, 2005).

Organisation charts are used to visually demonstrate organisational structure (Johnson, 2019: Online). An organisational chart depicts the company's chain of command (Johnson, 2019: Online). For the organisation to operate smoothly, the right flow of responsibilities from the top to the bottom is essential (Johnson, 2019: Online). According to Johnson (2019: Online), a company's "chain of command" refers to a company's hierarchy of reporting relationships, which is who must answer to whom from the bottom to the top of an organisation. The chain of command not only encourages accountability, but also establishes authority and decision-making power within a company (Johnson, 2019: Online). A proper chain of command ensures that one person is in charge of each task, job position and department (Johnson, 2019: Online).

3.4 Organisational structure and organisational performance

According to Friend (2019: Online) defines *organisational structure* as a system for defining a hierarchy inside an organisation. It defines each job, its function and who reports to whom inside the organisation. When customers are dissatisfied, the error is almost often within the organisational structure. Customers who are dissatisfied can be identified through customer complaints, consumer audits and other means (Ivancevich *et al*., 1994:254). An organisational structure can be designed in a variety of ways.

3.4.1 Organisational performance

The success of an organised collection of people working toward a common goal is referred to as *organisational performance* (James, 2012: Online). Organisational performance is defined as the actual output or results of an organisation as assessed against its expected outputs (or goals and objectives) (Al-Damen, s.a). According to Kiani and Kahnoog (2013:1) (citing Arabi & Parsian 1999), organisational effectiveness or performance is the degree to which an organisation can achieve its goals. The purpose of this research is to determine whether or not there is a link between organisational structure and organisational performance and quality.

3.4.2 Delegation of authority within organisational structures

An organisation's authority structure is critical to its ability to achieve its goals (Etzioni, 1959: 43-67). While developing an organisational structure, managers should consider how authority will be distributed throughout the organisation (Ivancevich *et al.,* 1994:254). Because quality is the key to commercial success in the food industry, authority in the quality department is critical. Managers must weigh the advantages and disadvantages of decentralisation and centralisation when delegating authority in order to strike an appropriate balance for the organisation (Ivancevich *et al.,* 1994:254). A company's QM reporting structure that is not structured with the right authority will likely result in poor quality manufacturing and disgruntled customers.

3.4.3 Chain of command

According to Gardea (2005: Online) defines a *chain of command* as a continuous line of authority that extends from the top levels of an organisation to the lowest ones and identifies who reports to whom. It is a communication link that connects all roles in the organisation and establishes a clear reporting relationship for each individual (Ivancevich *et al.,* 1994:254).

3.4.4 Span of control

The *span of control* is the number of employees who report to one manager or supervisor at a time. Managers must make this final decision while

designing organisational structure (Ivancevich *et al.,* 1994:254). The purpose is to determine if a large or small control span is preferable.

- A broad span of control (or flat organisation) has a large number of workers reporting to one supervisor, whereas a narrow span (or tall organisation) results in a small number of workers reporting to one supervisor (Ivancevich *et al.,* 1994:254).

This is one of the most important things to consider when building an organisational structure; so, when managers decide on an organisational structure, they must consider the opinions of all stakeholders. Top management must ensure that authority inside an organisational structure is carried out by the appropriate company structure.

3.5 Duties of person in charge of food premises

As per the R638 (*Regulations governing general hygiene requirements for food premises, the transport of food and related matters,* p. 21), the following rules and responsibilities apply to the person in charge of any food premises (South Africa, 2018: 21):

A person in charge of food premises must ensure that

(a) he or she is suitably qualified or otherwise adequately trained in the principles and practices of food safety and hygiene, as applicable, and that the training is accredited or administered by an inspector, if applicable;

(b) every other person working on the food premises is appropriately qualified or adequately trained in the principles and practices of food safety and hygiene, as applicable, by an inspector or any other suitably qualified person;

(c) routine evaluations are done to determine the impact of the training required under paragraph (b), and follow-up training is arranged as needed;

(d) training programmes and records are kept and routinely updated, as applicable, and are made available to an inspector or request (South Africa, 2018: 21).

This regulation was amended in June 2018 to require all food manufacturers to have a person responsible and accountable for food safety within their

organisation to ensure that businesses produce safe food every time and to avoid another Listeria crisis in South Africa.

There are some suggestions that may be useful, but there are no hard and fast laws that specify which structure is best for each specific organisation (Gleeson, 2019: Online). Because there is currently very little literature on this topic, this research will be undertaken through primary research inside the South African manufacturing industry.

3.6 Impact of organisational structure on productivity

The way an organisational structure is established and managed can have a direct impact on company productivity (Root, 2018). Depending on how well supervisory relationships and workflow influence productivity, organisational structures can either restrict or enhance performance. Goal-setting activities and frequent assessments by managers in the reporting hierarchy are part of performance management (Druggan, 2018). An organisational structure managed by top management will have a positive impact on productivity by reducing waste, for example, or increasing customer satisfaction.

3.7 Advantages of an effective organisational structure

According to a recent post, each structure has benefits and drawbacks in terms of how it adds to a firm's effectiveness and quality (*Role of organisational structure on effectiveness and performance*, 2018). Structures must be carefully considered by organisations because the structure should be unique to the organisation while still empowering employees to make their own judgments (*Role of organisational structure on effectiveness and performance,* 2018).

According to a recent article, each structure has advantages. One significant advantage, though, of a good organisational structure would be that it reduces employee conflict over who is to undertake specific jobs in the organisation (LaMarco, 2018: Online).

- *Facilitates specialisation:* Because each supervisor is an expert in his or her field, the organisational structure encourages job division (LaMarco, 2018: Online).
- *Easier communication:* The organisational structure should be constructed such that individuals and departments that need to coordinate their efforts have built-in lines of communication (Writing, 2017:1).
- *Better employee performance:* The supervisor instructs employees based on his or her own expertise or the organisation's regulations, and thereby assists employees in becoming better performers (LaMarco, 2018: Online).
- *Efficiency:* A well-designed organisational structure makes project completion easier (Writing, 2017:1).

An effective organisational structure can improve product quality and organisational performance if senior management adheres to the aforementioned criteria.

3.8 Dimensions of organisational structure

The organisational structure consists of three main dimensions: complexity, formalisation and centralisation (Kiani & Kahnoog, 2013).

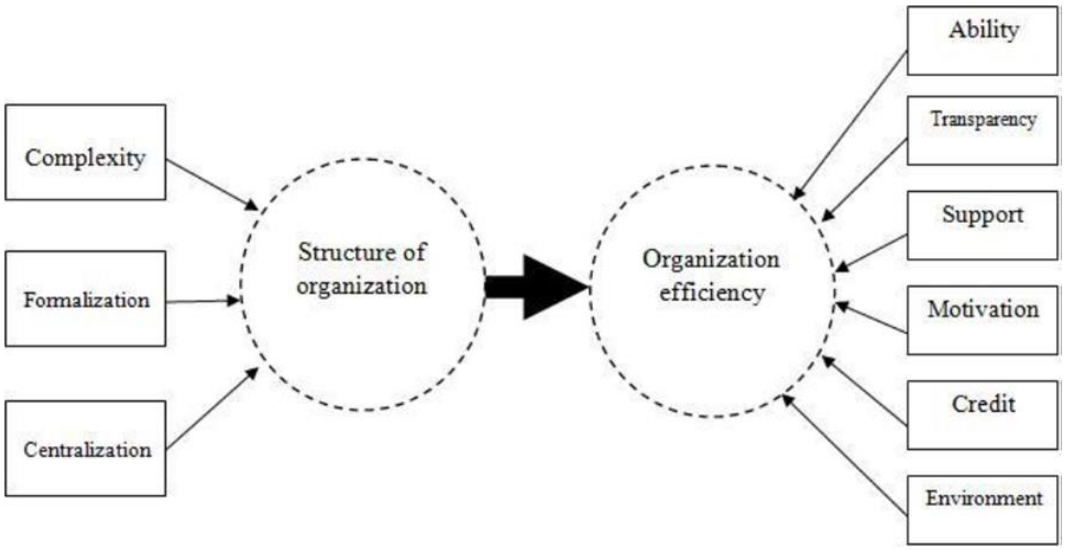


Figure 3.1: Research model of Robbin's organisational structure and Hessy's and Goldsmith's efficiency module (Kiani & Kahnoog, 2013)

- *Complexity:* The separation of tasks and the establishment of departments result in complexity. The number of clearly distinct job titles, as well as the number of clearly distinct departments, is referred to as complexity (Aquinas, 2008:127).
- *Specialisation:* The degree to which an organisation's tasks are divided into discrete jobs. The key idea underlying this organisational design is that a job is divided into steps rather than performed by a single individual. Individual personnel specialise in doing only a portion of a task rather than the entire task (Gardea, 2005: Online). The accountability and ownership of the entire QMS is defined as the responsibility of the business's quality assurance or food safety manager in most Western Cape food manufacturing companies.
- *Formalisation:* A level of standardisation is referred to as formalisation, meaning the degree to which a company's jobs are standardised (Aquinas, 2008:127).
- *Centralisation***:** In centralised organisations, senior managers have decision-making authority. In decentralised organisations, however, this is done by younger managers (Kiani & Kahnoog, 2013).

If the aforementioned dimensions are carefully followed, the company's organisational performance will be effective due to increased employee morale and motivation, increased profitability, top-level support, and the ability to start new businesses with customers, thereby enhancing customer relationships.

3.9 Cost of quality

The significance of an organisational structure and its impact on a corporation is not always obvious to business managers. As a result, organisations may suffer with a dysfunctional organisational structure which can affect company performance and, as a result, the cost of quality. The cost of quality is widely regarded as the fundamental tool for measuring quality (Gharakhani, Rahmati & Reza, 2013). According to Gharakhani *et al.* (2013), the cost of quality is used to track the performance of the TQM

process by selecting quality improvement initiatives. As a result, managers must be increasingly conscious of quality and how the cost of quality affects their company's profit margin. In a study conducted by Gharakhani *et al.,* researchers found evidence to indicate that efficient TQM adoption boosts long-term profitability and stock return (2013). It is therefore critical that the quality department of a food production organisation be organised in such a way that 'quality' always comes first.

A well-functioning quality management system with the necessary resources, including authority, can assist in increasing company profit margins and thereby boost organisational performance.

3.10 Types of organisational structural designs

When launching a new business, a company should pay particular attention to the company's organisational structure. Decisions should be taken with the company's size, industry and goals in mind. By effectively aligning the business needs with the framework in which the bossiness operates, a business of any sizes can enhance sales and other profits. There are three types of organisational structure: functional structure, divisional structure and matrix structure which is a combination of the two (Writing, 2017:1).

- *Functional:* A functional structure is another name for a bureaucratic organisational system. The functional structure divides the organisation into departments based on specialisation. This is a conventional company with a sales department, a marketing department and a customer service department (Alton, 2017:1).
- *Divisional:* Divisional structures are employed in major corporations that operate throughout a large geographic area or that have various smaller organisations within the umbrella group to cover different types of products or market areas. The advantage of this structure is that demands may be handled more quickly and precisely because each division can work independently of the other divisions in the business (Writing, 2017).

- *Matrix:* The third major type of organisational structure is the matrix structure, a structure which incorporates both divisional and functional components. This structure is popular in larger multinational organisations. A matrix organisation is a cross-functional organisational overlay that provides multiple lines of authority and puts employees into teams to work on a certain job for a set period of time. The matrix organisation has risen in popularity as organisations have decentralised and implemented quality programmes (Ivancevich *et al*., 1994:254).

A large majority of organisations adopt the functional structure, but again, each company must decide which structure is most appropriate. Businesses can also mix the best aspects of both to create a one-of-a-kind structure. Organisations, though, must remember that the objective of having an organisational structure is to retain communication and guarantee as few redundancies as possible (Sun, s.a).

3.11 Quality management structures

The effectiveness of a quality management system is greatly determined by how quality is organised inside a company. Quality can be organised in a variety of ways, from centralised to decentralised, with models in between (Shah, 2013).

Two design ideas dominate and impact organisational structures: centralisation and decentralisation (Lucey, 2005:1). In this study, three quality management models will be discussed: centralised, decentralised and the hybrid approach.

- *Decentralised quality management:* The process of spreading authority within an organisation is known as decentralisation. It gives an organisation member the authority to make decisions without obtaining approval from a higher-level management (Ivancevich *et al*., 1994:260).

- *Centralised quality management:* A corporate quality team administers high-level goals and initiatives across the enterprise in a centralised quality organisation (Shah, 2013).
- *Hybrid approach:* When done effectively, the hybrid approach to quality management can provide the best of both worlds. If not done appropriately, however, the hybrid technique may cause issues for both parties. The hybrid strategy entails managing only the global processes that can provide the benefits of a centralised approach, while leaving the local aspects of quality management that provide the benefits of a decentralised approach alone (Shah, 2013).

How should an organisation structure its quality management system? Briefly, there is no one-size-fits-all method for building quality within an organisation. Almost every organisation uses a hybrid strategy that incorporates elements of both centralised and decentralised quality standards. It is vital to understand a company's current goals and challenges and to align the strategy properly (Shah, 2013).

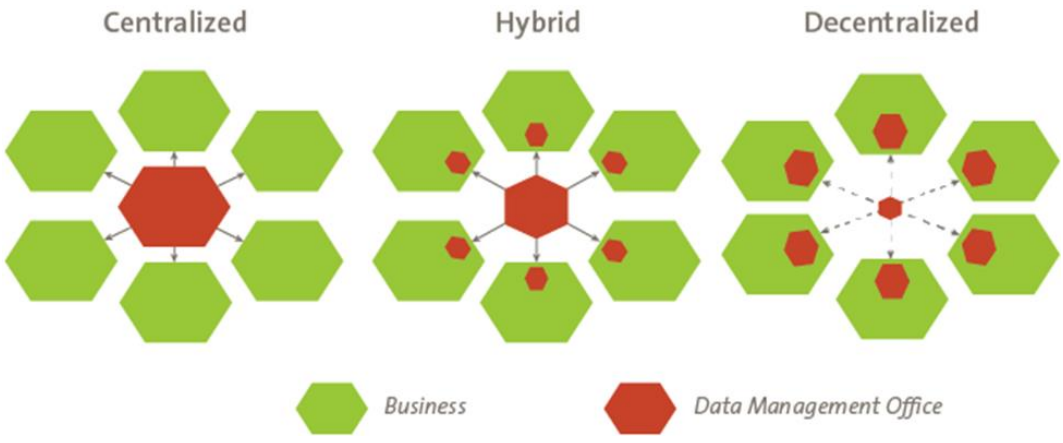


Figure 3.2: Diagram of centralised, hybrid and decentralised structures (Shah, 2013)

3.12 Measuring organisational performance

The word that mainly comes to people's minds when thinking about Six Sigma is *improvement.* Six Sigma methodology is focused on reducing

errors in processes by increasing efficiency and striving for continual improvement. Six Sigma is linked closely to organisational effectiveness and performance. This word relates to the overall efficacy of an organisation and how well it operates under supervision *(What is organisational effectiveness,* 2017).

High organisational performance occurs when all components of an organisation work together to produce excellent results; the results are measured in terms of value delivered to consumers. These elements are as follows (James, 2012: Online):

- *Strategic objectives:* Outline the path that everyone in the organisation should take.
- *Organisational structure:* The structure must support the strategy, and the strategy must consider the structure.
- *Business performance measures:* These represent the measures that will be used to assess each department inside the organisation. This measurement procedure will have a greater influence on behaviour than any other system that may be developed.
- *Allocation of resources and processes:* This is the process through which a company decides where to direct its limited resources – such as money, time and effort – in order to achieve its objectives.
- *Values, culture and guiding principles:* To recruit the 'best' people, the culture must promote the achievement of strategic goals.
- *Reward structures:* It is important to reinforce the culture and direct efforts to support the achievement of strategic objectives, for example, monetary (a bonus for meeting short-term targets) or promotion (recognition of having gained certain abilities) (James, 2012: Online).

All of these components are linked, so any change to one will have an impact on one or more of the others. Similarly, one subpar component will likely have a negative impact on the others, yielding less-than-satisfactory

results. So, what precisely is organisational performance? It is putting all of these components together to get great results (James, 2012: Online).

Accurate evaluation of organisational performance allows managers to identify and correct weaknesses, saving costs and enhancing customer satisfaction. TQM approaches have a direct impact on two important organisational performance measures: cost and quality (Al-Qahtani *et al.,* 2015:1). A TQM system, according to Al-Qahtani, Alshehri and Abdaziz (2015:1, citing Gharakhani, 2013), has a considerable impact on organisational performance, notably financial performance (citing Arumugam *et al.,* 2008). Without the necessary tools, it is difficult to change operations and steer employees in the right direction.

There are several specific quality approaches available to analyse organisational performance and provide meaningful feedback to leaders (DeBenedetti, 2018): Diagrams include control charts, Pareto diagrams, cause-and-effect diagrams and process mapping. According to Psomas and Fotopoulus (2009:2), a survey of 83 food processing companies in Saudi Arabia (citing Alsaleh, 2007) found the majority of the food enterprises have been certified to some form of quality standard. Control charts, run charts, histograms, Pareto charts and cause-and-effect charts were employed throughout the manufacturing stages, from raw material reception through end-product marketing, displaying some early indications of TQM implementation.

3.13 Best organisational structure for companies within South Africa for effective organisational performance and QMS

There is currently no research to support this statement; however primary research will be undertaken through this dissertation's study. According to the literature, large organisations used more decentralised systems, thus top managers delegate decision-making authority to juniors; otherwise, decision-making becomes delayed. Centralisation is the most important decision-making mechanism in a company. With centralisation, all decisions are made by one person with one brain and then implemented by the direct

manager (Kiani & Kahnoog, 2013:1). According to Kiani and Kahnoog (2013:1), centralisation is the most important strategy for making decisions in one area (quoting Faghihi & Vaziry 1999).

3.14 Conclusion

A good organisational structure with independent quality is not the result of luck, chance or historical accident. Top management is responsible for designing a structure that improves the overall strategy of the organisation by considering elements such as competition, environment, and, most importantly, customer satisfaction. To do so means consumer satisfaction will rise, improving yield statistics and increasing client traffic. The maintenance of an efficient QMS is crucial for an effective organisational structure to have a strong annual return on investment.

CHAPTER 4

RESEARCH DESIGN AND METHODOLOGY

4.1 Introduction

This chapter explains how the research was carried out to address the main research questions and related sub-questions. The most appropriate research methods, as well as the research design and approach strategy, are discussed. The data collection technique is examined. Finally, this chapter also includes a discussion on ethics, research assumptions and constraints.

An acceptable research technique approach is required to meet a study's objectives while also fitting into the greater framework of the research. "Methodology refers to the complete research process, beginning with theory and ending with data collecting and analysis" (Hussey & Hussey, 1997: 54).

Under the "research design and technique strategy", three specific components should be elaborated on in this study:

- The research positioning in connection to the design methodology.
- The research strategy that will be used to conduct the research.
- The data collection process that will be used to obtain research data.

In order to answer the research questions mentioned in Chapter 1, an empirical investigation was conducted. According to Yin (1994:19), a research design is the logical sequence that connects empirical data to a study's initial research question and, eventually, to its conclusion. This chapter describes the research technique and research strategies used to achieve the objectives of this study.

4.2 Scope

The scope of work has been limited to food and packaging manufacturers in South Africa, even more narrowly to the Western Cape. Only the person in responsibility of quality and food safety in the company, as well as companies that already have an FSMS/QMS in place, can complete the survey form.

4.3 Research design and methodology

The primary research objective is to raise awareness and provide recommendations to the food manufacturing industry regarding the most advantageous, effective and functional quality management organisational design structure.

The goal is also to guarantee that quality management carries a voice of authority within the organisational structure to assure good quality products by actively preventing non-conformities. To conduct research on the current organisational structural designs in the Western Cape food sector, a quantitative research technique was chosen as an alternative for the proposed study approach. The rationale for using this practice is supported by literature.

4.3.1 Research design

The research design is the overarching strategy for how the researcher will approach answering the study questions (Saunders, Lewis & Thornhill, 2009:136).

Creswell (2002:4) distinguishes three types of study designs:

- Qualitative (creating or utilising numerical data);
- Quantitative (creating or utilising non-numerical data such as words);
- Mixed techniques (which incorporate elements of both qualitative and quantitative approaches).

The quantitative research design is best suited for this research topic.

Quantitative research

Quantitative research is used to quantify and generalise behaviours, perspectives, attitudes and other aspects from a larger population. Quantitative research uses numerical data to express facts and ascertain study trends. This research style employs statistical and mathematical tools to acquire results.

When seeking to quantify a problem, quantitative data will draw conclusions about its purpose and dominance by looking for findings that can be generalised to a larger population.

This data collection method includes online, print, mobile and kiosk surveys; online polls; systematic observations; face-to-face interviews, phone interviews; and other methods.

The following are reasons for the selection of a quantitative design, as this method:

- allows for a broader study
- engages more participants
- allows for better generalisation of results
- allows for more objectivity
- generates more accuracy of outcomes.

In general, quantitative methodologies are meant to provide data summaries that support broad generalisations about the topic under study.

4.3.2 Research methodology

The research methodology focuses on the research process as well as the tools and procedures used, such as the analysis of existing (secondary) data and documents (van Wyk n.d., slide 13).

4.4 Data collection design and methodology

The following techniques have been identified as the most appropriate forms of data collection for this proposed research.

- Collecting data using primary sources through the following:
    - *Questionnaire design:* Collis and Hussey (2009:192) define questionnaire design as a strategy for gathering primary data in which a sample of respondents is asked a list of precisely constructed questions chosen after extensive testing in order to elicit trustworthy responses. The questionnaire's design can be divided into four parts:
        - developing question content;
        - ordering the questions and questionnaire layout;
        - selecting the question types; and
        - wording each question carefully.
    - Clear tangent planes were established between the content of the questions to be used in a survey, the research problem, the primary and secondary research questions, and the primary and secondary research objectives.
- The research questions were answered in conjunction with the literature review by compiling and analysing the data sets described above.

The most important aspect of developing a questionnaire is ensuring that respondents understand the questions. This ensures that the solutions are not based on speculative assumptions and that the data is accurate and credible (Hussey & Collis, 2009:192).

4.4.1 Population of the study

Due to the rapid growth of food manufacturing enterprises in the Western Cape, no specific data on the population of food companies in the Western Cape could be identified. This research effort will determine the population of the Western Cape. According to an online article published by the African

News Agency Wesgro (2014), the Western Cape Province is the largest contributor to SA food and beverage exports, contributing 47% of SA's food and beverage exports. This research will focus primarily on the Western Cape region of South Africa, which continues to be home to some of the country's top food production enterprises. The sample will be drawn from small, big and corporate food enterprises to assess the impact of organisational structure on organisational performance and quality. The sampling design for this study included 30 food processing enterprises in South Africa, located specifically within the Western Cape. The 30 companies were divided into two groups: 15 corporate/large business owners and 15 small business owners. The respondents were the Quality Assurance/Food Safety Managers (QA/FS) or any senior management who was familiar with all aspects of the organisation. The reason for selecting one individual per organisation is due to the vast number of companies engaged. The questionnaire will be completed, and an interview will be conducted as a follow-up, when required.

4.4.2 Questionnaire

A standard questionnaire with structured questions was used to collect primary data. The questionnaire was created in accordance with the study's objectives.

The questionnaire contained information gleaned from the academic review as well as real-world experience in the food production business. The questionnaire was designed in a cross-functional manner, with multiple choice questions included. The major goal was to elicit feedback from participants using both qualitative and quantitative methods.

The questionnaire included questions about the organisation's structural design, top management involvement, continuous quality improvement, communication, how deviations and non-conformities are communicated, profit margin, cost-to-quality, waste and staff involvement, as well as changes that have occurred in the last 5-10 years. Self-administered questionnaires were used. Mouton (2001:99-110) advises researchers to identify and choose data sources judiciously, keeping in mind the challenges that may occur as a result of the data type chosen.

4.5 Data validity, reliability and trustworthiness

Data must be measured by researchers. An instrument is any device used for this measurement. There are two primary criteria for instruments (Goddard & Melville, 2001:41): reliability and validity.

Collis and Hussey (2009:186) define *validity* as the extent to which study findings accurately represent what is happening. This refers to whether the data represents a true representation of what is being investigated.

Cooper and Schindler (2001:318-320) distinguish three types of validity: content validity, criterion-related validity, and construct validity. This study will include all three basic types of validity testing. This study will consider the sub-elements of criterion-related validity, namely relevancy, independence from bias, reliability, and availability.

4.6 Data analysis and data collected

Data analysis is carried out using descriptive statistics, which include measures of central tendency, variability and frequency. Standard deviation and other measures of variability will be utilised to enlighten the analyst about the distribution. To analyse the data, the Statistics Package for Social Scientists (SPSS) application is used, and the results are presented in the form of tables for easy interpretation.

Data are gathered exclusively from the questionnaire as the research instrument. The majority of the items in the study are answered on a Likert scale of 1-5. The scores ‘Not important’ and ‘Less important’ shall be represented by mean score, equivalent to 1 to 2.5 on the continuous Likert scale (1 ≤ Less important ≤ 2.5). The scores of ‘Moderately important’ were equivalent to 2.6 to 3.5 on the Likert scale (2.6 ≤ Moderately important ≤ 3.5). The score of ‘Important’ and ‘Highly important’ will represent a major contribution to the role of implementation. This will be equivalent to 3.6 to 5.0 on the Likert Scale (3.6 ≤ Important ≤ 5.0).

4.7 Ethics

The Collins Dictionary (1979:502) defines *ethical* as "in line with principles of behaviour that are regarded correct, especially those of a given profession or organisation".

According to Walliman (2010), *ethics* can be split into two categories:

- the values possessed by the researcher; and
- the means and manner in which the researcher interacts with participants and the data acquired.

When communicating with participants, the following factors were considered: consent, secrecy, anonymity and civility (Mouton, 2001: 240-244).

Informed consent, the right to privacy, honesty with professional colleagues, voluntary involvement, and anonymity and secrecy were the primary ethical considerations for this study.

To adhere to internationally accepted ethical standards, no individual or firm names are recorded on study devices. Anonymity will be preserved in this manner. Moreover, none of the respondents will be compensated for their participation in the study.

4.7 Research assumptions

According to Walliman (2010:15-16), research is gathering data and information, analysing that data and information, and then creating an understanding of a certain topic to gain knowledge. Walliman continues, that because researchers interpret events through their own experiences, assumptions established by the researcher can influence how the specific research is conducted.

The following research assumptions have been identified as part of this research study:

- Top management must have a mindset adjustment regarding the quality structure and the benefits the correct QMS organisational structure can have on the organisation.
- Top management must comprehend the significance of quality management in the food production industry.
- Top management must understand their role in establishing a positive quality culture in the workplace.
- Top management must accept accountability and responsibility for the brand's quality.
- Top management must comprehend the meaning of the term *quality* and the significance of a high-quality product.

4.8 Research constraints

Limitations and de-limitations of research are terms used to describe research limits. According to Collis and Hussey (2009: 128-129), *limitations* indicate flaws in the research, whereas *de-limitations* illustrate how the scope of the study was limited to a single region or entity, rather than a broader or more comprehensive approach. Within the suggested research, the following research restrictions are mentioned:

- *Limitations pertaining to the research*
    - Due to business policy and confidentiality, and the possibility of a conflict of interest, the participants in this study are unable to provide all information.

- Due to a conflict of interest, the participants will not give their full or accurate opinion on the current situation within the business.
- This study may suffer from a poor response rate because not all companies will respond to the questionnaire disseminated.
- Future studies might benefit from conducting qualitative study on structure first, to have a better understanding of each organisational structure before developing the questionnaire.

- *De-limitations pertaining to the research*
  - The organisational design structure of only certain food manufacturers within the Western Cape and South Africa will be reviewed.
  - This study will only focus on the organisational structures of the food and packaging industries, not other businesses, despite the fact that quality management is critical in all kinds of business.

This research will only include a sample within the food business industry, and the research will be directed to the quality management team.

CHAPTER 5

DATA ANALYSIS

5.1 Introduction

The findings from the study's research will be presented in this chapter. A literature study was conducted, as well as a survey questionnaire, to address the research questions indicated in Chapter 1, which served as the foundation for the questionnaire issued to the sample population. This chapter summarises the results and links the results to the study questions and objectives. The results will be discussed in depth in Chapter 6.

The survey questionnaire was created to assess the impact of organisational structure on company performance and quality in the food industry.

5.2 Survey questionnaire

The questionnaire contains ten sections. Section 1 consists of the company's demographic and profile section.

Section A: Company Details: To establish the general profile of the enterprise and respondent
Section B: Organisational structure: reporting structure
Section C: Quality Management System (QMS)/Food Safety Management System (FSMS)
Section D: Good Manufacturing Process (GMP) compliance to FSMS to ensure company compliance
Section E: Responsibility and authority
Section F: Staff Training and Competency
Section G: Top management/management commitment and communication
Section H: Customer service/customer complaints
Section I: Competency: staff behaviour/cultural behaviour
Section J: Performance measurement and cost of quality

The following research questions were interpreted within the following sections:

	Research question	Section
1	Which organisational structures are commonly adopted within the Food Safety Management System (FSMS) in South Africa?	Section B
2	Which Quality Management System(s) is/are adopted within the South African food industry?	Section A, C
3	Which prerequisite programmes (PRPs)/goods manufacturing practices (GMPs) define compliance to the identified QMS in the South African food industry?	Section C2, D1, D5, D4
4	Do the PRPs/GMPs employed by a company have an impact on the organisational performance with regards to quality and compliance to QMS?	Section C2, D1-D3, F3-F4, G
5	If a relationship exists (i.e., if a clear correlation is discovered from question 4), which organisational structure is the best for companies within the South African food industry with regards to compliance to QMS and organisational performance?	Section B, E

To verify the instrument's dependability, we made certain that each response we received was answered in full, and before evaluating the results, data was cleaned to eliminate and remove respondents who left unanswered questions.

5.3 Sample description

This survey aimed at 30 food and packaging manufacturers. The manufacturing companies were selected from the Western Cape region. In contrast, the questionnaire survey was issued to over 40 businesses. Of these, 31 certified food and packaging companies responded. The poll was distributed electronically via email, with a 77.5% response rate obtained. Because the original aim was for 30 companies, the response rate is theoretically 100%. One response was removed because it was unclear who completed the poll. More than 90% of the businesses are situated in the Western Cape, and they are all South African. A Quality representative from a food manufacturing company answered the questions. More than 90% of the manufacturing companies were food manufacturers, with less than 10% being food packaging companies. The response data was cleaned and modified to include 31 valid responses, which will be presented in this chapter. The number of employees at the 31 companies examined varied, but in general, they were as follows.

5.3.1 Section 1: Respondent profile

All the respondents that participated in the survey are Quality representatives and Food Safety/Quality Managers who performed work within the Food Safety and Quality section in South Africa.

5.3.2 Company size and age

The number of employees at each company was utilised to determine its size. This metric was chosen since a corporation's structure is typically determined by the number of employees.

More than 94% of the companies in the study have been in operation for more than ten years, with 85% operating for more than 20 years and 35% operating for more than 30 years. This indicates that the vast majority of businesses are well-established.

5.4.1 Section A: Company profile and details

Table 5.1: Average calculation of number of employees within each organisation

Number of Employees	Responsiveness	%
> 250	13	41,94
125-250	4	12,90
75-125	5	16,13
25-75	7	22,58
1-25	2	6,45
	31	100,00

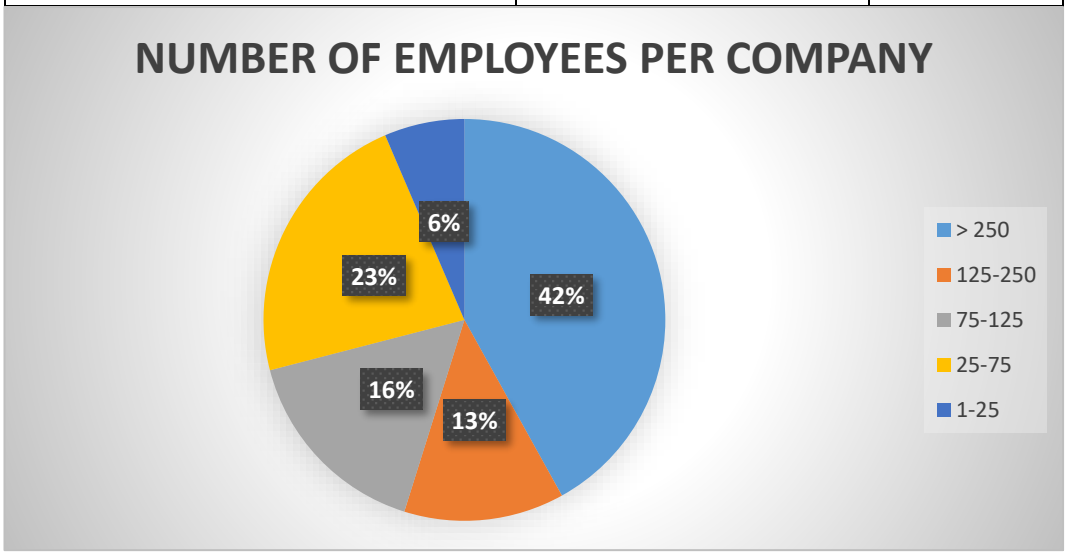
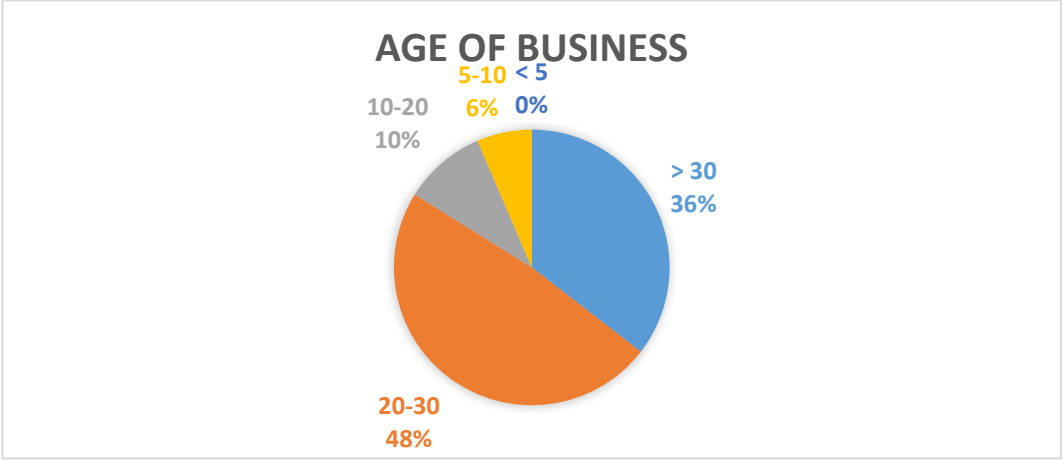


Table 5.2: Average calculation of the age of business

Age of Business (Years)	Responsiveness	%
> 30	**11**	35,48
20-30	**15**	48,39
10-20	**3**	9,68
5-10	**2**	6,45
< 5	**0**	0,00
	31	100,00



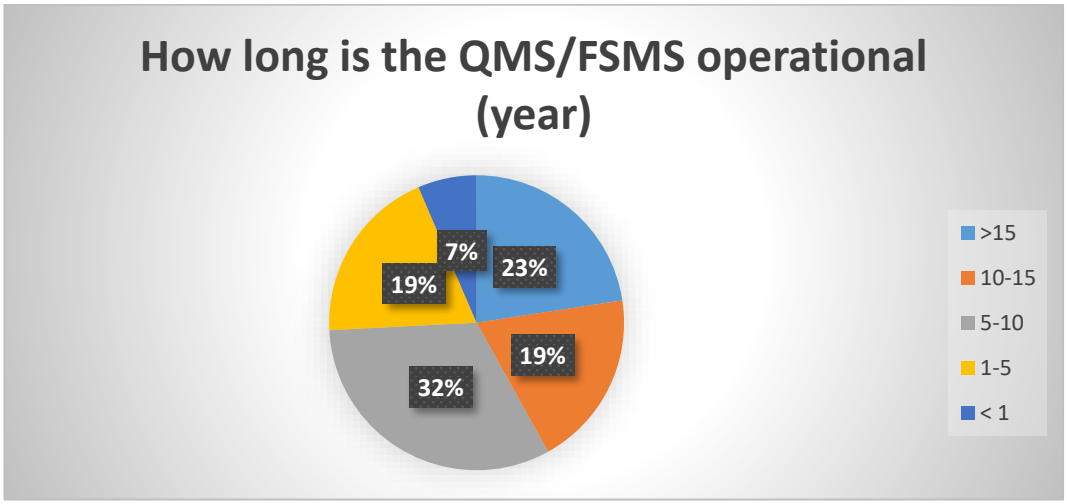


Figure 5.1: Overview of how long the QMS/FSMS are in operation

Company profile conclusion

It may be assumed that the businesses represented in this poll have been in operation for at least 10-15 years: 74% of the correspondents reveals that the companies are already well established; 19% have worked in the business between 1 and 5%.

5.4.2 Research question 1: Which organisational structures are commonly adopted within the Food Safety Management System (FSMS) in South Africa?

It is feasible to conclude that the organisational structure inside the researched and evaluated businesses was not fully understood by all, and hence there is no solid evidence of which organisational structure is most frequently employed with the FSMS:

- 19% of the quality representatives and managers who completed the survey did not answer this section, indicating that they were uninformed of their organisational system's existing structure.
- Only 54% of organisations are satisfied with their company's current reporting structure.

The following answers were not clear on the types of organisational structure designs that food and packaging manufacturing companies now have in place.

- 38% indicated that they have a divisional structure in place: operates in a wide geographic area/have separate small organisation within the umbrella group to cover different types of products.
- 45% indicated a functional/bureaucratic structure in place that divides the organisation by speciality (a traditional business with a sales department, marketing and customer services department). However, it was discovered that more than 39% of the participating organisations did not comprehend the vocabulary for this section and hence could not answer correctly and confidently. They were clearly unfamiliar with the terminology as well, since some admitted that they had never heard many of these terms.

Research on the organisational reporting structure of a quality management system within the food manufacturing business could not be conducted using articles from South African journals, newspapers and other sources. The food safety and quality standards listed below

(FSSC 22000, SQF, IFSQN, and HACCP) make no mention of specific reporting mechanisms that must be followed inside a business. The ISO 9001 (QMS) standard does not necessitate the creation of an organisational chart; rather, it just requires the definition and communication of authority lines (Anjoran, 2014:1).

The purpose of choosing an organisational structure is to identify connections, power structures and communication systems that are best suited to the specific organisation or industry. There are some guidelines that may be helpful, but there are no fixed rules that specify which structure is best for each specific organisation (Gleeson, 2019: Online).

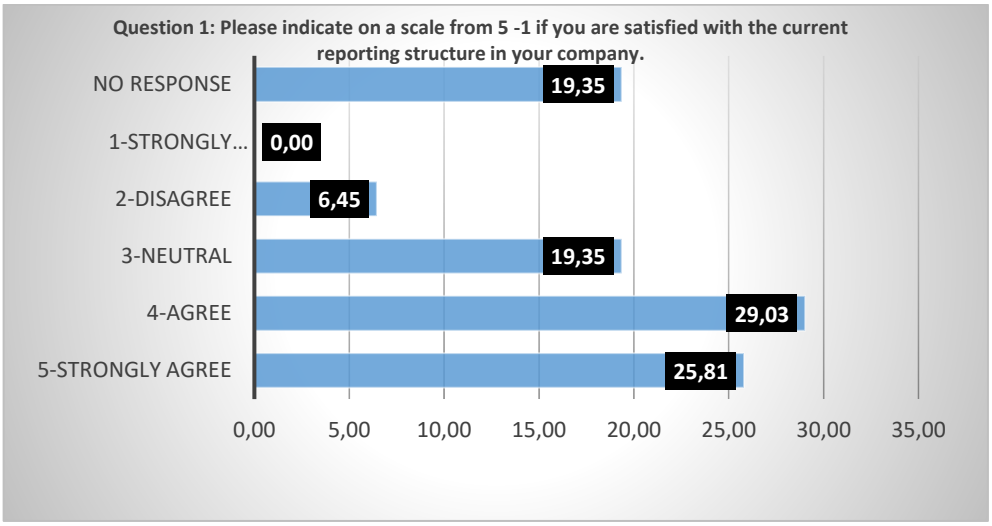


Figure 5.2: Questionnaire data analysis graph: reporting structure in company

Just over half (54%) of the correspondents rated satisfaction, with a 20% non-correspondence rate and 6% who disagree.

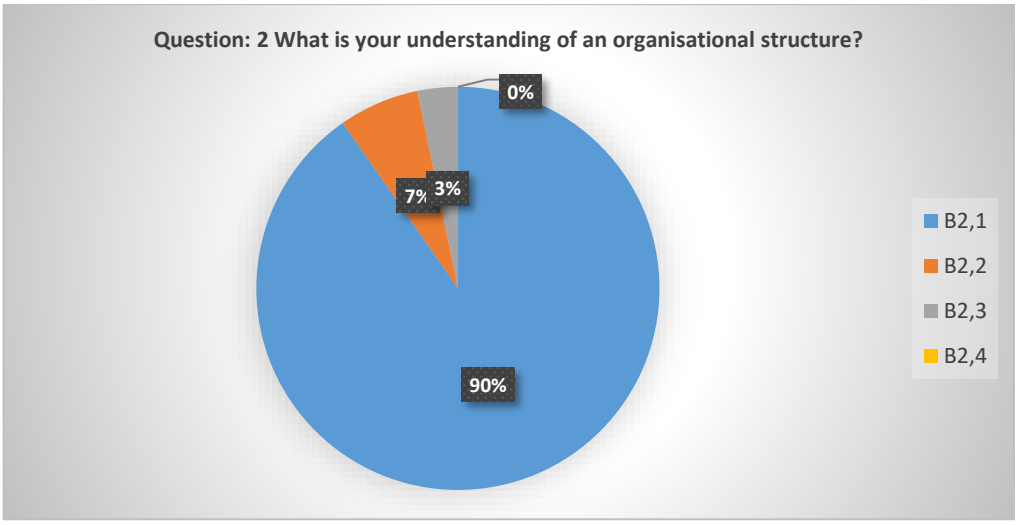


Figure 5.3: Questionnaire data analysis graph: understanding of an organisational structure

The questionnaire received 90% positive feedback on respondents' comprehension of an organisational structure, indicating a diagram illustrating the reporting relationship and formal arrangement of job positions, which includes supervisor-supervisor interaction, communication channel, management levels, job division and major subdivisions.

Figure 5.4: Questionnaire data analysis graph: delegation of authority within an organisation

About three-fourths (81%) of participants understand authority delegation inside their organisation, where authority is delegated via a chain of command: continues line authority, which extends from the highest levels of the organisation to the lowest ones, and specifies who reports to whom.

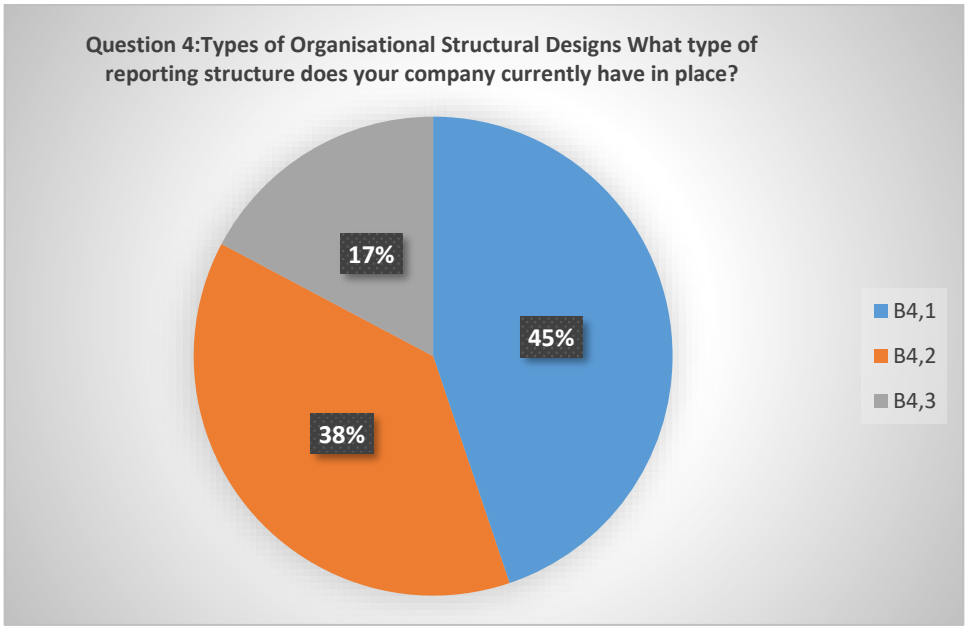


Figure 5.5: Questionnaire data analysis graph: types of organisational structural designs for reporting structure

The two most common organisational structures identified within companies were as follows:

- Functional/Bureaucratic – 45%: Divides the company based on specialty (a traditional business with a sales department, marketing department and customer service department);
- Divisional – 38%: Operates in a wide geographic area/have separate smaller organisations within the umbrella group to cover different types of products or market areas.

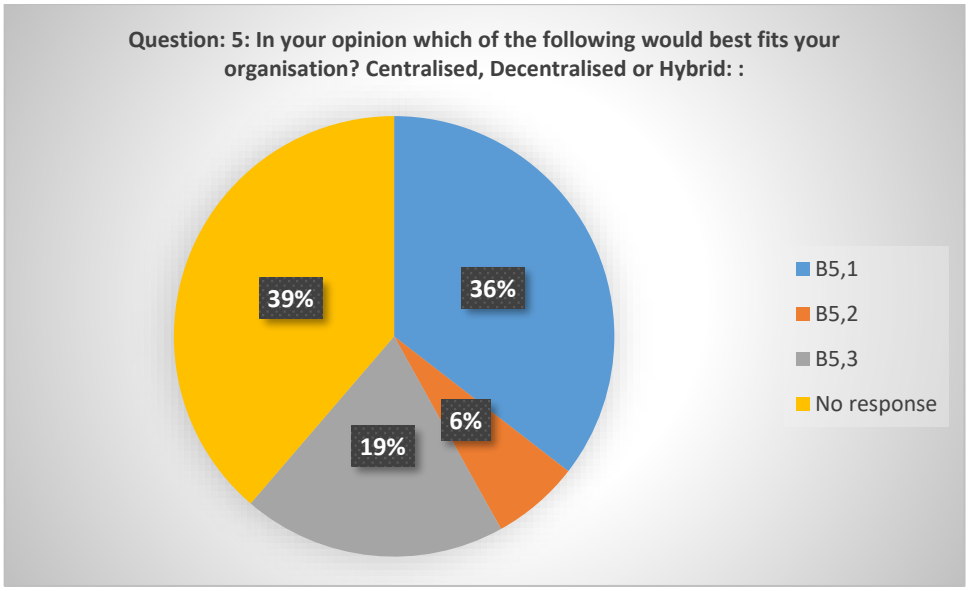


Figure 5.6: Questionnaire data analysis graph: best fit organisational structure (centralised, decentralised or hybrid)

Centralised (36%) – Organisation is led by a corporate quality team that manages high-level goals and initiatives across the enterprise.

It was highlighted that 39% of the participants did not answer this question as some did not understand the terminology or know which structure the company was currently using.

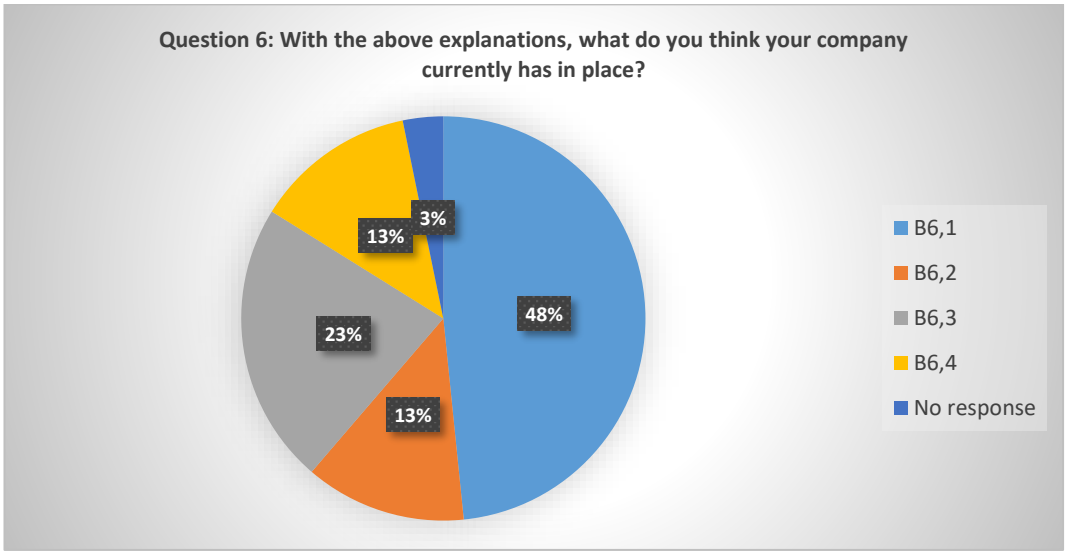


Figure 5.7: Questionnaire data analysis graph: organisational structure companies have in place

Centralised (48%) and hybrid (23%), with 3% no response rate

About half (48%) the participants indicated that a centralised system is currently running within their business; with 23% indicating that a hybrid system is currently running within their business.

A decision on the organisational structure the organisations have in place cannot be drawn since 16% of respondents indicate no response (either no respondents or respondents did not understand the terminology).

Conclusion to section

Quality representatives are unsure about the current organisational structure within their company; it could be argued that awareness of the current organisational structure utilised in the food sector is essential due to a lack of understanding.

5.4.3 Research Question 2: Which quality management systems are adopted within the South African food industry?

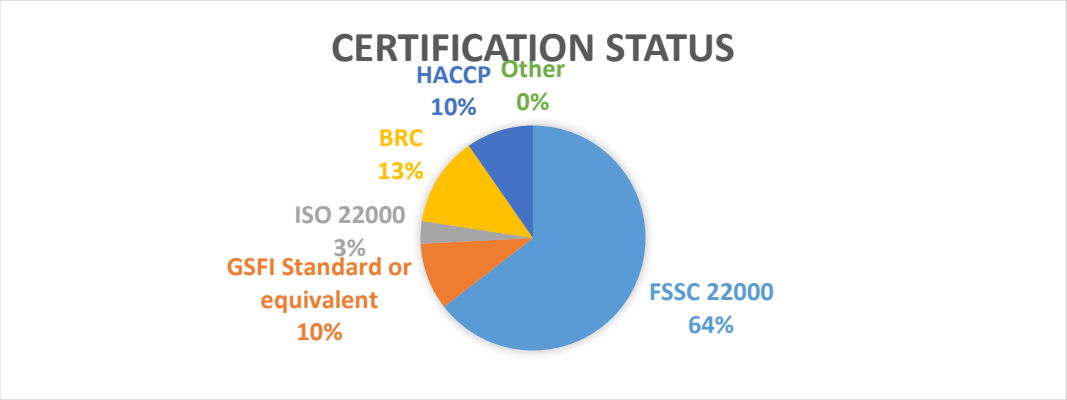


Figure 5.8: Questionnaire data analysis graph: QMS that are adopted within SA

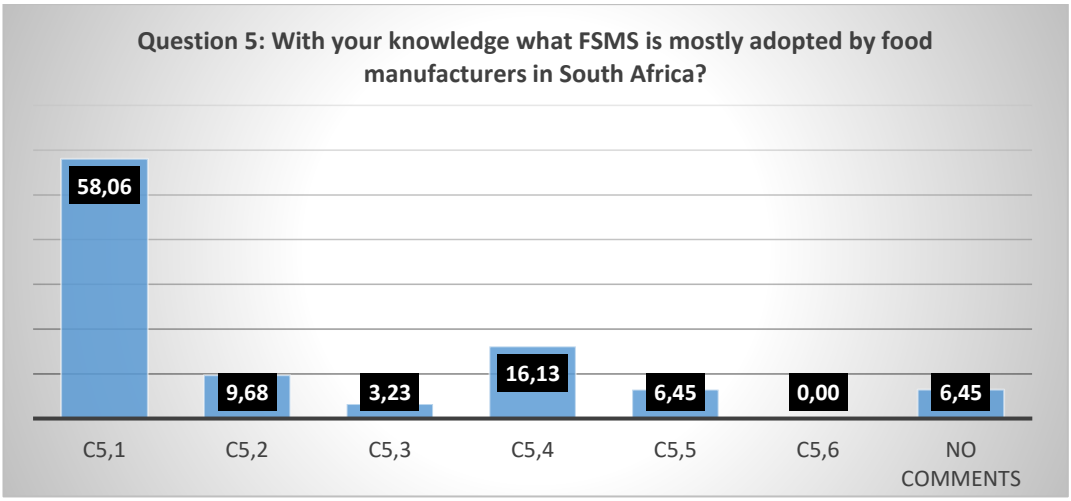


Figure 5.9: Questionnaire data analysis graph: the FSMS that is mostly adopted by food manufacturers in SA

According to 58% of respondents, the international recognised food safety standard FSSC is also confirmed by the company's certification status, as 64% of the enterprises that completed the poll were FSSC certified at the time of participation. According to 16%, the majority of SA firms adhere to a GFSI/Worldwide standard, which is also a recognised international norm.

- As 36% of the companies that participated in the survey have an equivalent FSMS in place, it therefore can be concluded that all the companies that completed the survey have a formalised international food safety standard and have adopted an FSMS/QMS.
- A significant number (64%) are FSSC certified with 36% (other international food safety standards) = 100%.

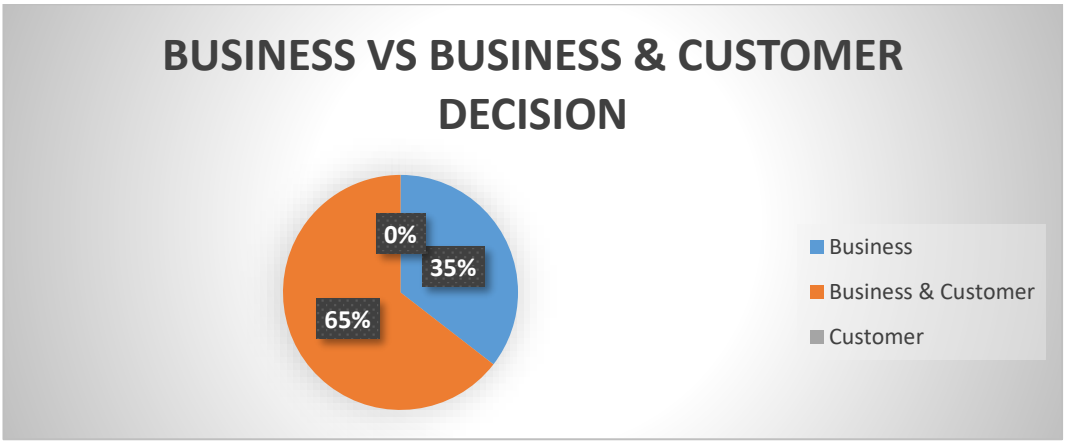


Figure 5.10: Questionnaire data analysis graph: is QMS/FSMS a business or customer decision

Both the client and the business, as shown in the graphical representation above, choose to be certified against a Food Safety/Quality Management system.

Over half (65%) were combined commercial and consumer and 35% were customer decision. The preceding is a strong indication that client needs are critical and that organisations must meet them. Not one respondent indicated that this is only a business decision.

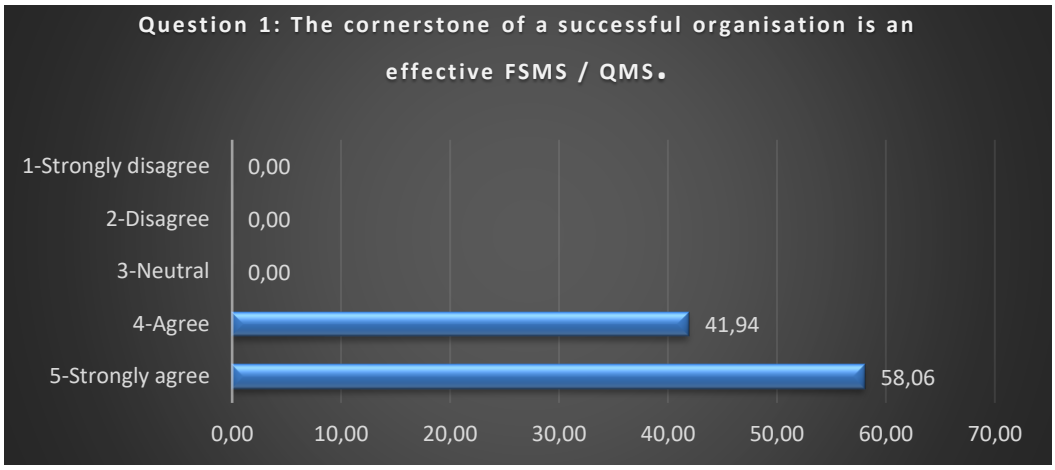


Figure 5.11: Questionnaire data analysis graph: cornerstone of a successful organisation

All the questionnaires (100% of the survey feedback) showed agreement that the cornerstone of a successful organisation is an effective FSMS/QMS

Conclusion Research Question 2

It is possible to conclude that all participating companies in this study have an FSMS in place, and that the majority of food companies in South Africa have an FSMS in place. The FSSC standard, which is the most modern and up-to-date standard, is the identified FSMS now employed by the majority of food processing organisations. A number of food safety standards owned privately by certifying organisations are used globally and have been adopted by the South African food and packaging industry. All approved standards include the British Retail Consortium's (BRC), Hazard Analysis and Critical Control Point (HACCP), Safe Quality Food (SQF), ISO 22000:2005, FSSC 22000, GFSI, International Food Standard (IFS),

GLOBAL GAP, which has been implemented as Food Safety Management System (FSMS),and ISO 9001 (QMS) (Trienekens & Zuurbier, 2008:111-115). The food manufacturing industry uses three internationally recognised quality assurance (QA) systems to ensure quality, according to Psomas and Fotopoulus (2009:2, citing van der Spiegel *et al.,* 2005, 2007): Hazard Analysis Critical Control Point (HACCP), International Organisation for Standardisation (ISO), and British Retail Consortium (BRC). Various ISO certification standards for food production companies have been developed over the years. Most food businesses now require certification for both business and customer reasons, as evidenced by a 65% affirmation that certification is required for both business and customer reasons.

Food safety and quality standards are voluntary rather than compulsory, and are frequently implemented in response to customer requests (*Agriculture, Health, Trade, and Industry Acts; Food, Cosmetics, and Disinfectant Acts; Environmental Health Regulations*).

5.4.4 Research Question 3: Which prerequisite programmes (PRPs)/ goods manufacturing practices (GMPs) define compliance to the identified quality management system in the South African food industry?

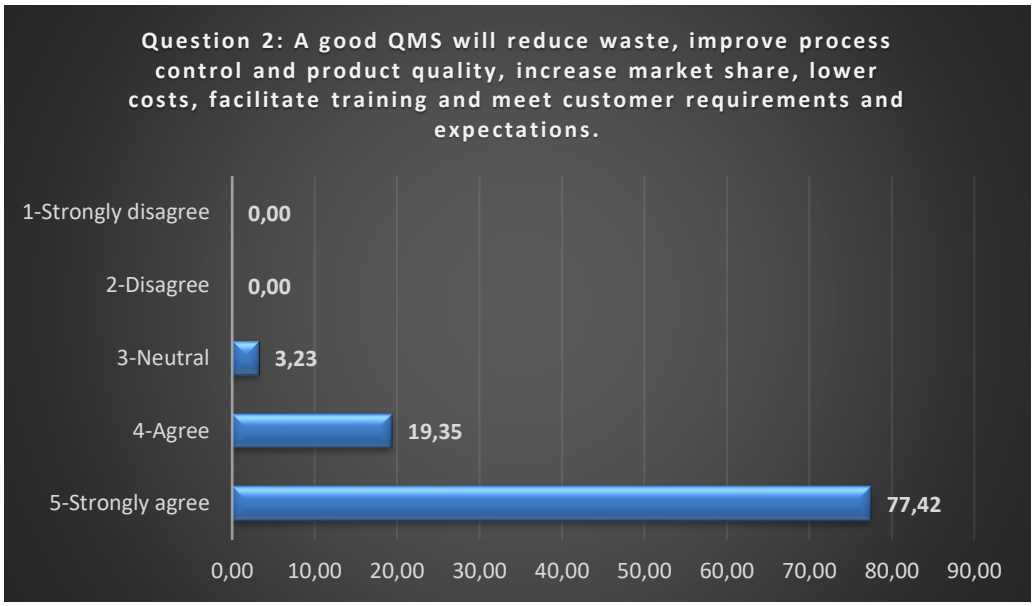


Figure 5.12: Questionnaire data analysis graph: can a good QMS reduce waste, improve process control and product quality?

According to the graph above, nearly all participants agreed that an effective QMS will reduce waste, improve process control and product quality, increase market share, lower costs, expedite training, and fulfil customer requirements and expectations. This is a strong indicator because respondent recognise the importance of the QMS and the benefits of adhering to the FSMS.

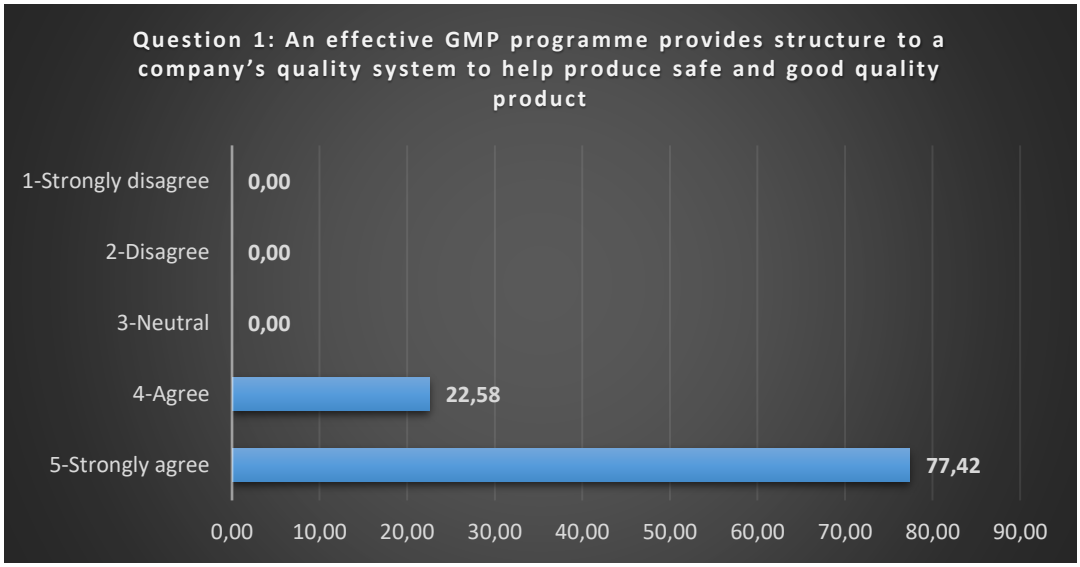


Figure 5.13: Questionnaire data analysis graph: an effective GMP programme provides structure to a company's quality system

Compliance with the QMS: In terms of developing a successful GMP programme that would provide structure to a company's QMS, it is conceivable to infer that there is complete compliance with the QMS. As a result, an effective GMP programme can help a company's QMS by providing structure and assisting in the manufacturing of safe, high-quality products.

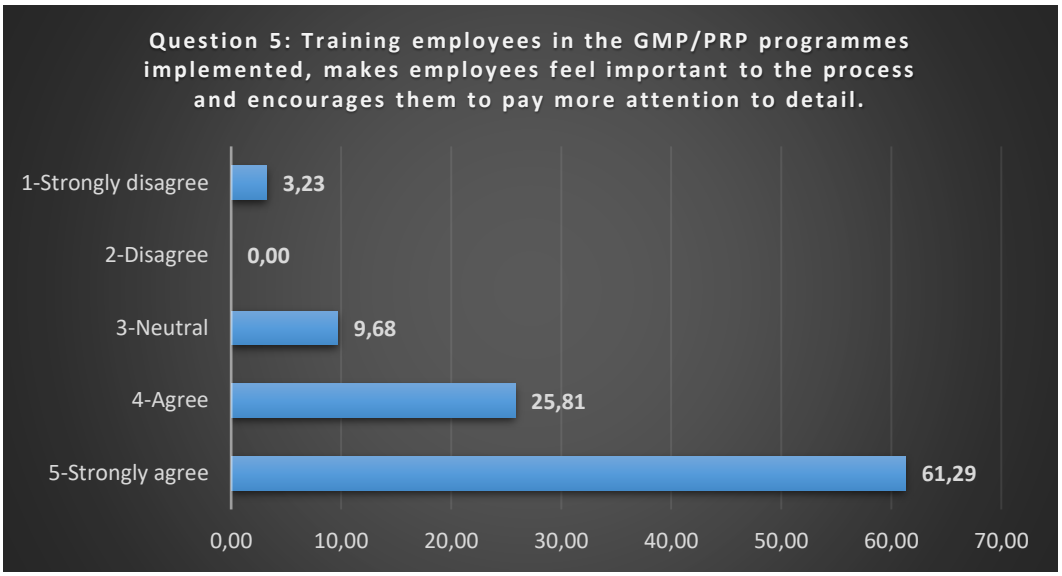


Figure 5.14: Questionnaire data analysis graph: training employees in GMP/PRP programs makes them feel important to the process

Training is a GMP that is agreed upon by all organisations for compliance with the QMS. Most participants (86%) stated that training employees in the GMP programmes implemented makes employees feel important to the process and motivates them to pay attention to detail.

Figure 5.15: Questionnaire data analysis graph: the last food safety audit report reflected team work involvement

Most participants (85%) said that their most recent safety audit included teamwork from various stakeholders within the company, which is a solid indicator of compliance and certification.

Conclusion Research Question 3

A company can save money by implementing proper controls and strategies to reduce product waste (Sauer & Schrader, 2011). According to Laird, Holton and Naquin (2003:6), training personnel in the GMP/PRP programmes used makes them feel important and valuable to the process and motivates them to pay more attention to detail. As a result, other components of the programme, such as waste reduction, will benefit from activities completed correctly the first time. Companies can expect better final products by minimising waste and increasing employee commitment. GMP contributes to promising food quality outcomes such as compliance (Ngwa, 2017).

Comprehensive 'cost of poor quality' (CPQ) performance measures can help companies measure the tangibility of their GMP activities. A simple calculation can quickly evaluate how well personnel are implementing the GMP programme: CPQ = cost of unsatisfied customers, waste cost, waste location cost and waste prevention cost (Sauer, 2005). It is evident from this research that a good GMP is a company investment; and that a good QMS will eliminate waste, improve process control and product quality, increase market share, cut costs, expedite training, and fulfil customer requirements and expectations.

Given that GMPs are successful and aid in team involvement, it is reasonable to conclude that having PRPs/GMPs in place as the cornerstone of a company's FSMS system is a key to success in complying with certification.

5.4.5 Research Question 4: Do the PRPs/GMPs employed by a company impact organisational performance with regards to quality, compliance and QMS?

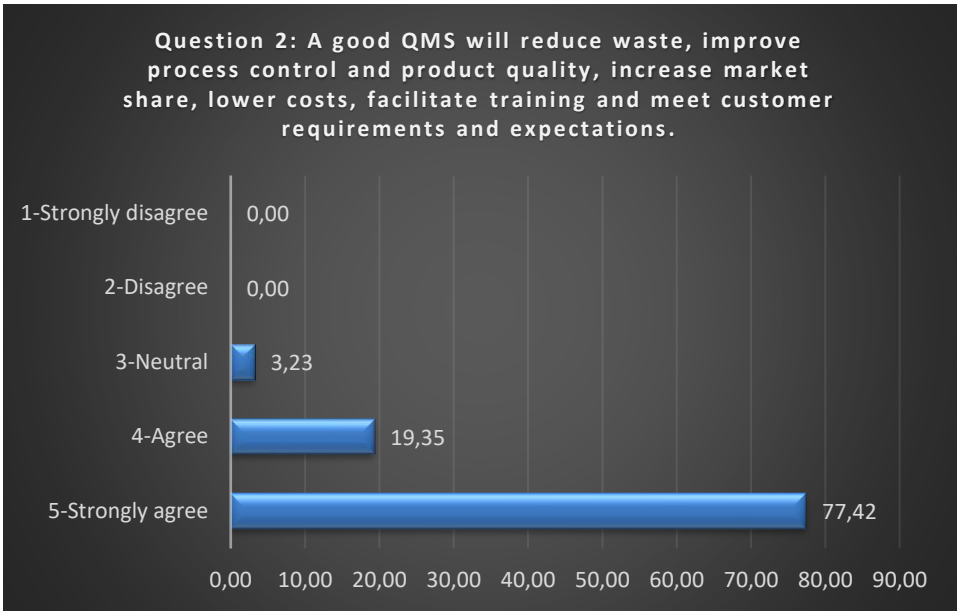


Figure 5.16: Questionnaire data analysis graph: a good QMS will reduce waste, improve process control and product quality

There is complete agreement that a good QMS will minimise waste, improve process control and product quality, gain market share, reduce costs, streamline training and meet customer requirements and expectations.

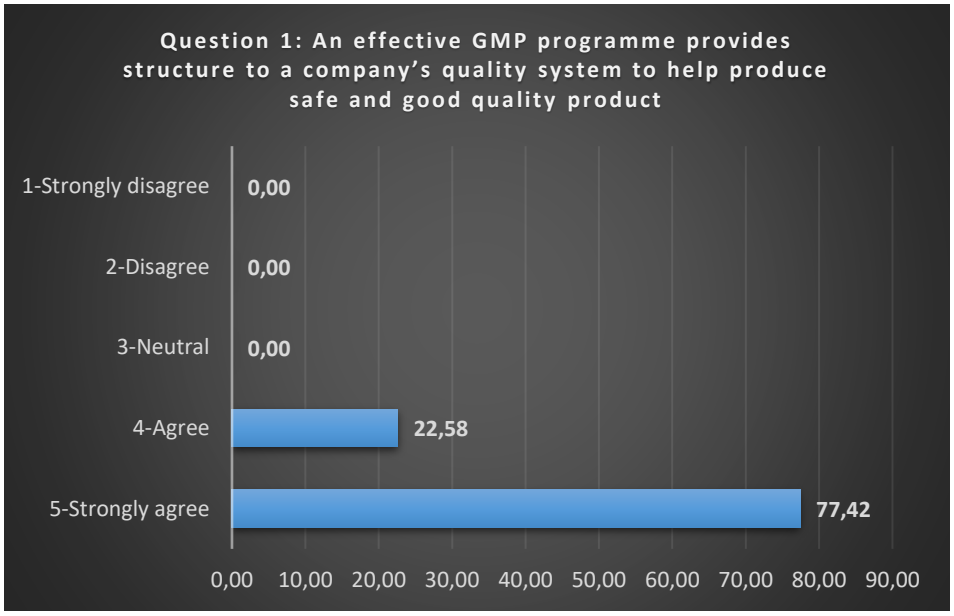


Figure 5.17: Questionnaire data analysis graph: an effective GMP programme provides structure to a company's quality system

All the respondents (100%) agreed with the following: an effective GMP programme provides structure to a company's quality system to help produce safe and good quality products.

Figure 5.18: Questionnaire data analysis graph: an effective GMP programme can serve as a basis for instilling a quality discipline and culture

Most of the respondents (93%) agreed: an effective GMP programme can serve as a basis for instilling a quality discipline and culture into a manufacturing process.

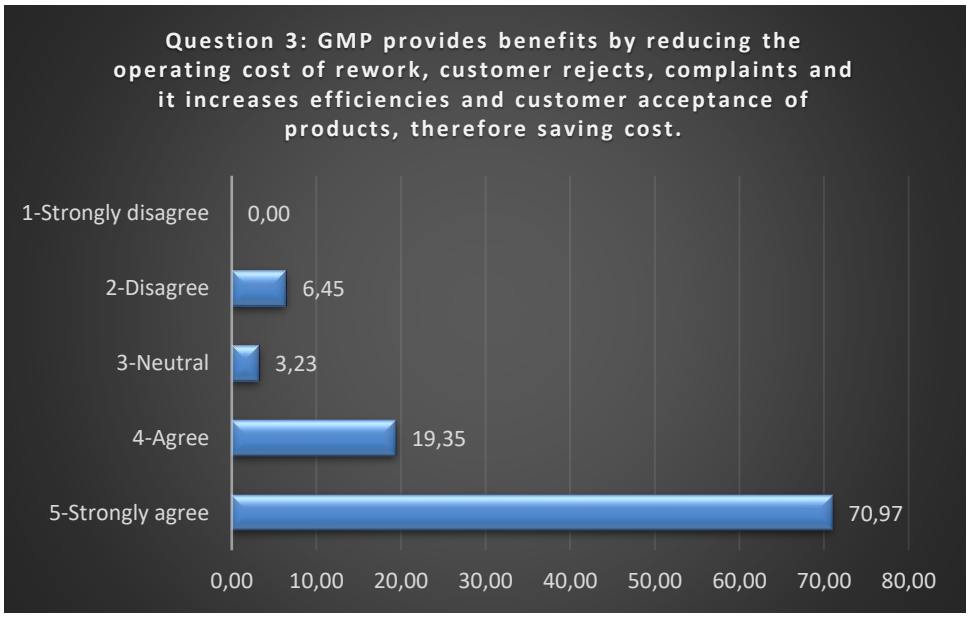


Figure 5.19: Questionnaire data analysis graph: GMP provides benefits by reducing the operating cost of rework, customer rejects, complaints

Again, most of the respondents (90%) agreed: GMP provides benefits by reducing the operating cost of rework, customer rejects and complaints, as well as increasing efficiencies and customer acceptance of products, which saves cost.

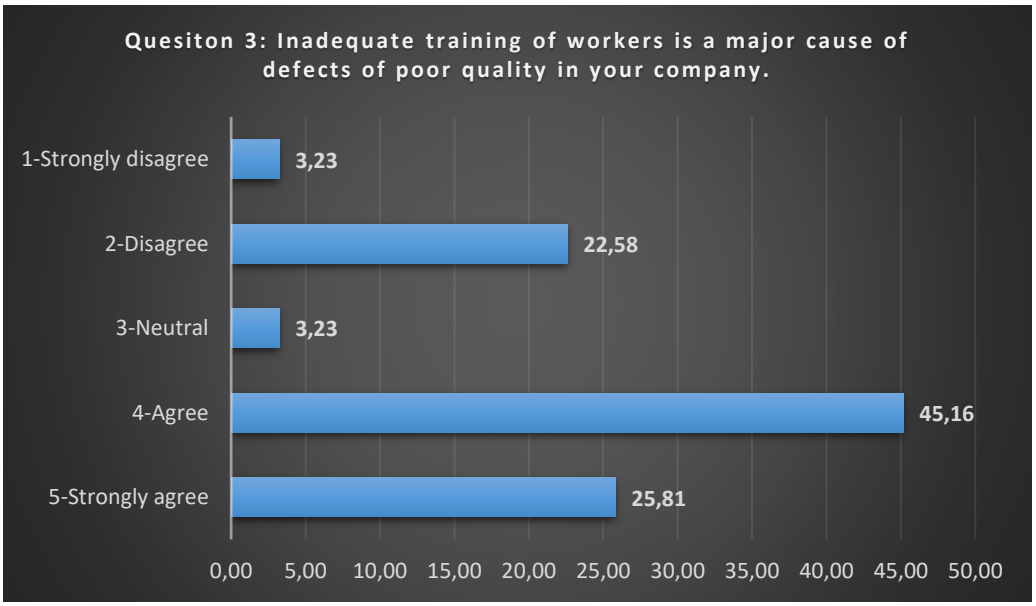


Figure 5.20: Questionnaire data analysis graph: inadequate training of workers is a major cause of defects of poor quality

About three-fourths of the respondents (71%) agreed and 26% disagreed. The majority of company participants felt that inadequate worker training is a primary source of low-quality faults in their company.

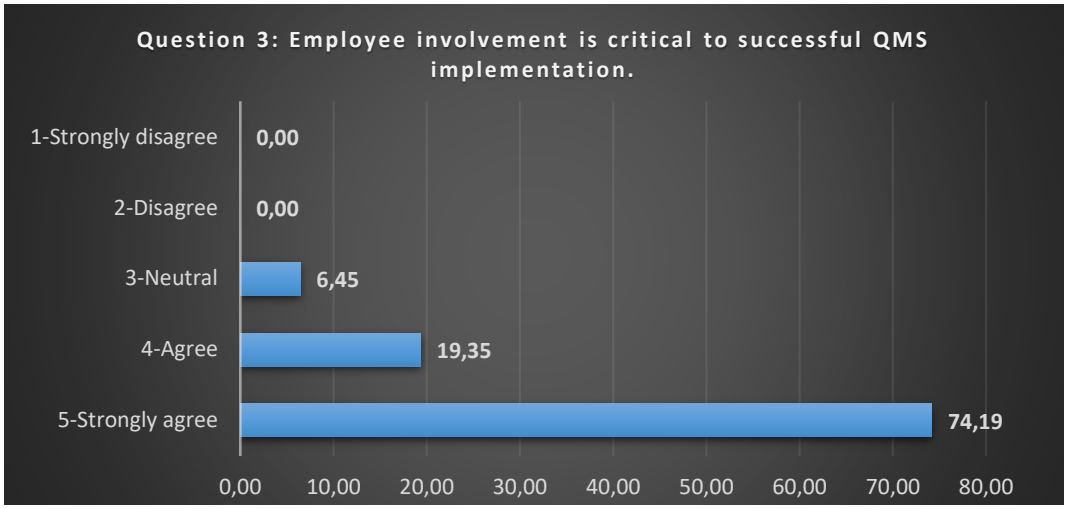


Figure 5.21: Questionnaire data analysis graph: employee involvement is critical to successful QMS implementation

It has been confirmed by companies that employee involvement is critical to successful QMS implementation.

Figure 5.22: Questionnaire data analysis graph: customers are satisfied with the quality of the product and the quality of services delivered

Nearly all (more than 95%) respondents noted customer satisfaction on product quality and service delivery, indicating that PRPs/GMPs are being applied efficiently.

Conclusion Research Question 4

Companies with ISO 9001 certification benefit from a variety of advantages, including increased product quality, increased customer satisfaction, reduced waste, recall prevention, product quality and reliability, increased customer satisfaction, increased company income, and continuous system improvement through monitoring (Ngwa, 2017).

According to Killburn (2015: Online), a strong quality management system should decrease waste, increase process control, gain market share, cut costs, promote training, meet customer expectations and boost morale. TQM is the least frequently used quality system in the food manufacturing and distribution industries, according to Psomas and Fotopoulus (2010:2, quoting Beardsell & Dale, 1999).

According to a journal paper on the advantages of TQM, implementing numerous quality initiatives in organisations can boost customer satisfaction as well as product and service quality performance (Al-Qahtani *et al.,* 2015:3).

It may be confirmed that GMPs and PRPs practiced and implemented by a corporation have a positive impact on organisational performance and QMS compliance.

5.4.6 Research Question 5: If a relationship exists (i.e.,' if a clear correlation is discovered from question 4), which organisational structure is the best for companies within the South African food industry with regards to compliance to QMS and organisational performance?

Conclusion Research Question 5

The use of GMPs and PRPs has a favourable impact on organisational performance and QMS compliance; thus, there is likely a link between the impact of a company's organisational structure on QMS management and organisational performance. The data provided by the respondents was not comprehensive enough to be able to establish the ideal organisational

structure, however. The most prevalent South African organisational structure that is committed to QMS might be further explored and investigated.

5.4.7 Top management commitment

Management is committed to the Food Safety and Quality Management System, since commitment is one of the most critical components in establishing and sustaining a successful FSMS.

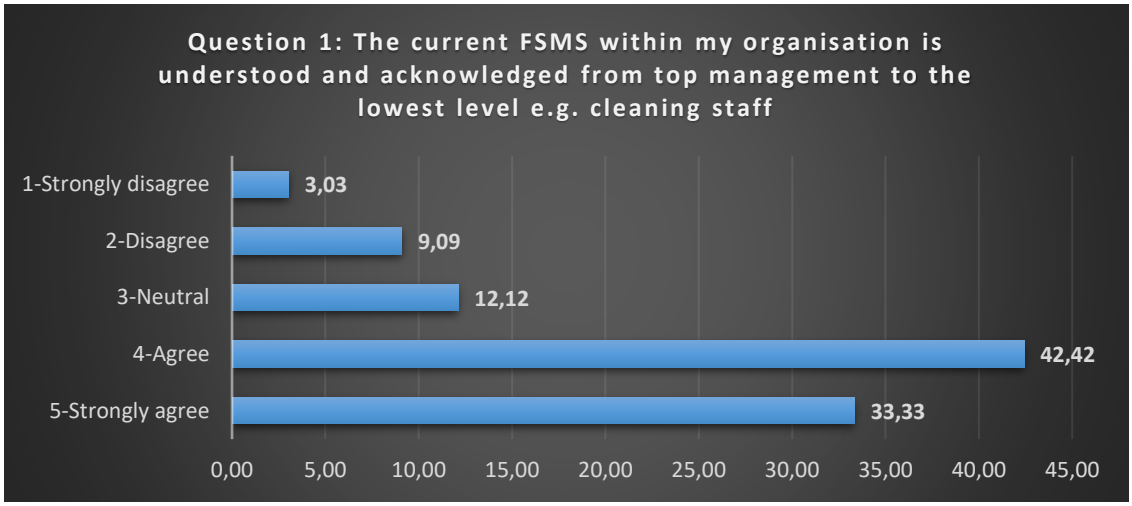


Figure 5.23: Questionnaire data analysis graph: current FSMS is understood and acknowledged from top management to the lowest level

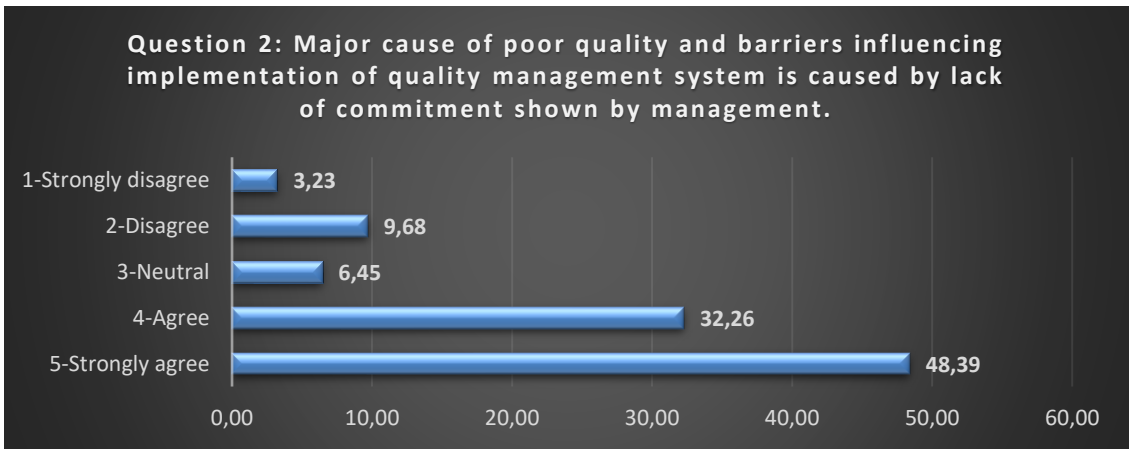


Figure 5.24: Questionnaire data analysis graph: major cause of poor quality and barriers influence implementation

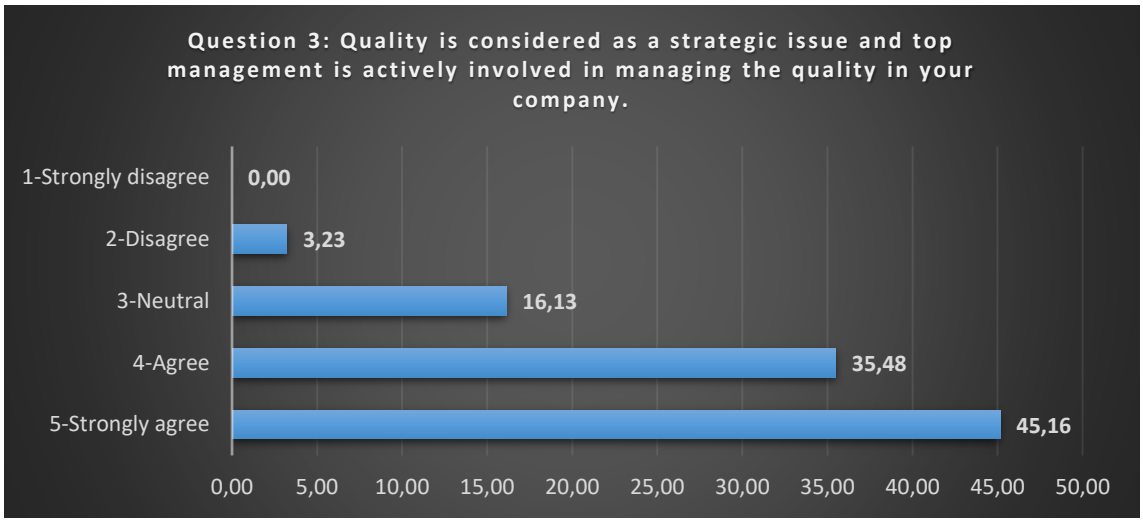


Figure 5.25: Questionnaire data analysis graph: quality is considered strategic

Figure 5.26: Questionnaire data analysis graph: performance of internal communication in companies

Figure 5.27: Questionnaire data analysis graph: performance of external quality communication in companies

5.4.8 Customer satisfaction

Figure 5.28: Questionnaire data analysis graph: customer complaints related to quality

Figure 5.29: Questionnaire data analysis graph: non-conforming product

5.4.9 Staff and cultural behaviour

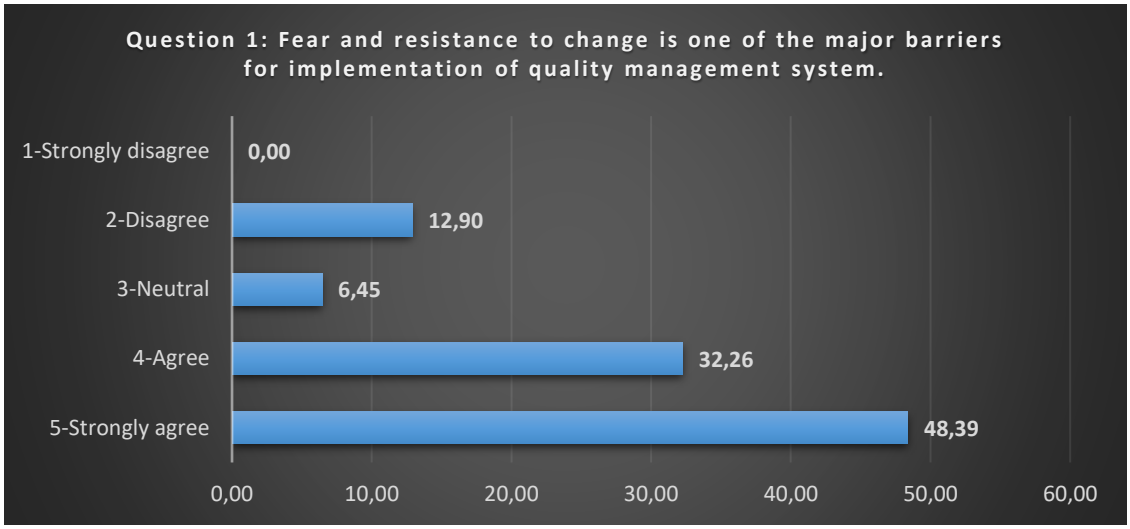


Figure 5.30: Questionnaire data analysis graph: major barrier – fear of resistance to change

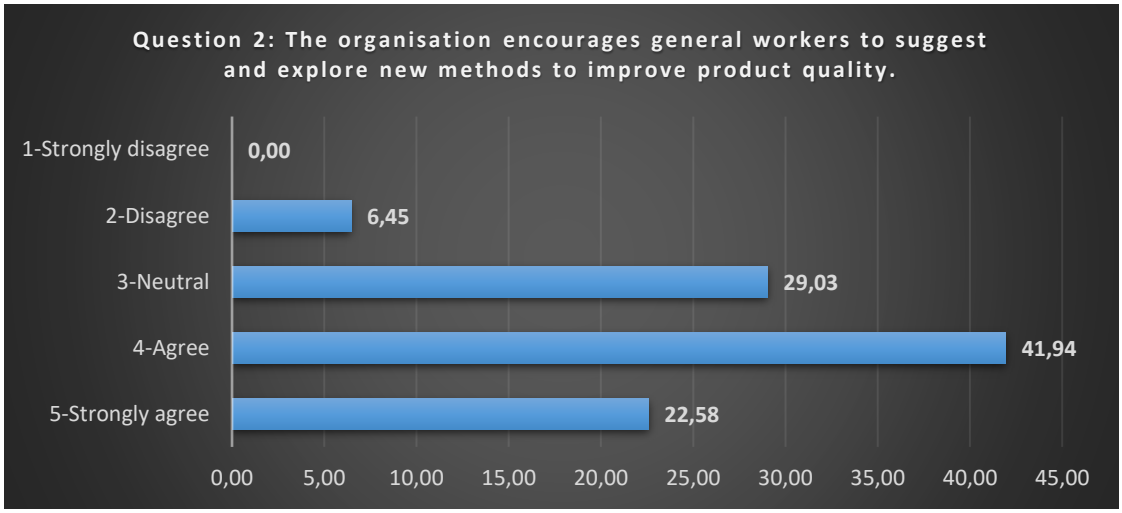


Figure 5.31: Questionnaire data analysis graph: new methods to improve product quality

5.4.10 Performance measurement and cost of quality

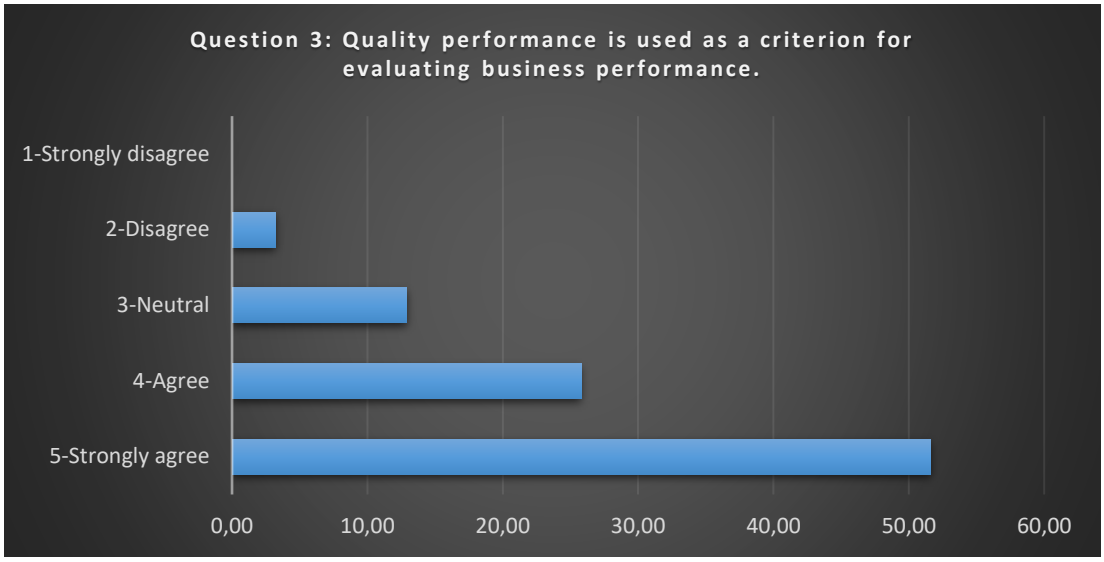


Figure 5.32: Questionnaire data analysis graph: quality performance evaluating criteria

Explain my company's quality targets:	
1.	I do not know.
2.	Are mainly focused on regulatory compliance and do not include customer requirements.
3.	Include some key customer requirements beside regulatory compliance.
4.	Fully cover customer requirements and regulatory compliance.
5.	Are fully comprehensive and based on a deep understanding of cost-quality trade-offs.

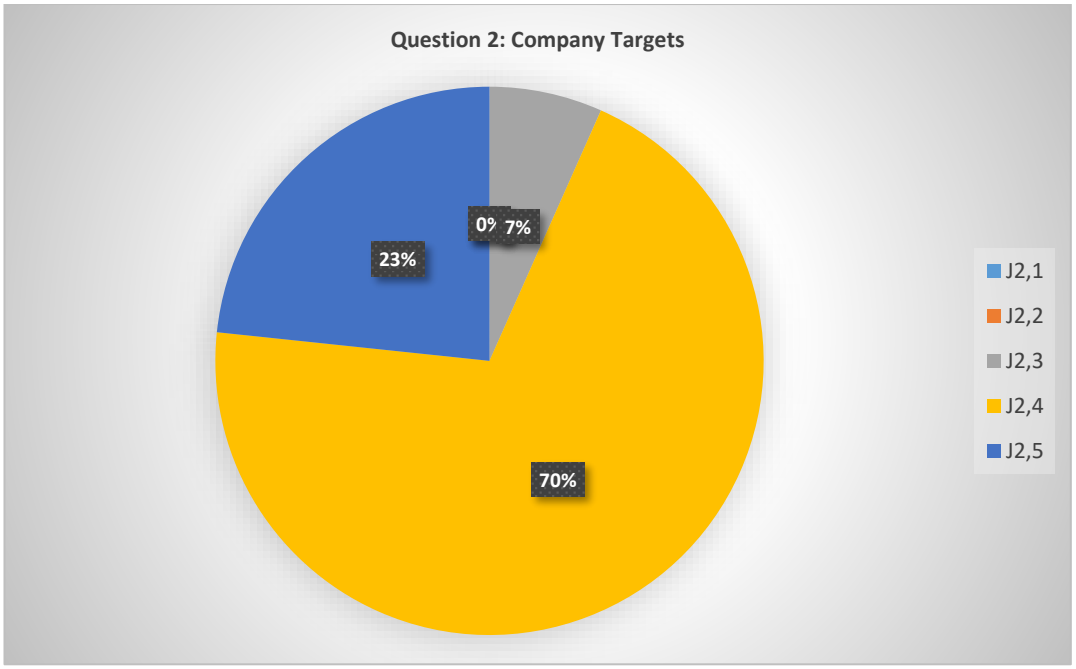


Figure 5.33: Questionnaire data analysis graph: company targets

Figure 5.34: Questionnaire data analysis graph: quality goal tracking KPIs

In my company, the quality goal tracking through KPIs is -
1. I do not know.
2. Yearly. Not systematic in terms of data consolidation and communication of results. Performance discussions/reviews are not in place.
3. Quarterly with regular updates, consolidation process is mainly manual. Regular performance discussions/reviews for top management are in place
4. Monthly through an IT-based system transparent to most employees. Regular performance discussions/reviews for line management are in place.
5. Weekly through an IT-based system transparent to all employees, who participate in regular performance discussions/reviews

5.5 Conclusion to data analysis

Research question: The research question to be investigated is: *How does the organisational structure adopted within an FSMS affect compliance to QMS and organisational performance within the South African food industry?*

The findings demonstrate that effective GMP/PRP programme implementation leads to successful QMS compliance and organisational performance in the food business. A good GMP programme provides structure to a company's quality system, enabling it to manufacture safe and

high-quality products. Participants generally agreed that a well-established QMS will minimise waste, improve process control and product quality, increase market share, save costs and make training easier. A thorough and rigorous precursor programme is essential for the successful implementation of the food safety system (Fuller, 2007:1). Many food processing organisations have used the GMP certification scheme as the foundation for creating and implementing other quality and food safety management systems, such as HACCP, ISO 22000, SQF and ISO 9001 Ngwa (2017).

Chaloner-Larsson *et al.* (1997:6) define good manufacturing practices (GMP) as a segment of quality assurance that ensures food products are uniformly manufactured and well controlled in accordance with the quality standards appropriate for their use and as expected by the marketing authorisation (Ngwa, 2017).

It is reasonable to assume that the research examined question cannot be fully finished due to a lack of participant responses because it is uncertain which organisational structure is now used within the food business.

CHAPTER 6

CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

The purpose of this research was to investigate guidance for the food manufacturing industry toward the most helpful and practicable Quality Management organisational structure within a corporation. This research also intended to determine the use of a QMS within an organisation and explore how it can benefit not just product quality but also process improvement activities and, more importantly, the effectiveness of the business and customer relationship. A well-established organisational structure will benefit the food manufacturing sector, the quality industry, and customers, in addition to all previously listed benefits.

The research problem is that a food manufacturing company's food safety and quality management team does not always have the support of senior management to reject and stop deviations that occur within the operational system. As a result of not having this authority, poor product quality, lower productivity, greater waste, dissatisfied customers with more customer complaints, and a decrease in profit might occur, influencing employee morale and behaviour toward the QMS. According to Guitar (2012:1), there is no defined standard norm for whom a company's quality management should report to. But even a minor incident involving product quality could jeopardise the brand's credibility and image. This can harm the company's reputation and result in losses. As a result, this underscores that having suitable quality control procedures in the food business is critical for brands working with food goods.

This chapter presents research conclusions and recommendations in light of the theory, discussions, investigations and findings.

The primary research objectives of this study were as follows:

1. to determine the organisational structures commonly adopted within the Food Safety Management System (FSMS) in South Africa;

2. to identify the quality management systems adopted within the South African Food industry;
3. to determine the operational practices (PRPs/GMPs) which define compliance to the identified QMS;
4. to determine if a relationship exists between specific operational practices (PRPs/GMPs) and compliance to QMS; and
5. to identify the best organisational structure for effective organisational performance.

Objective 1

It can be concluded that an awareness campaign is required to explain the various types of organisational structure that are currently used in the food industry, as many quality representatives are unsure about the organisational structure that is currently in place within their organisation, due to a lack of understanding about organisational structure and the terminology surrounding organisational structures.

Objective 2

It is possible to conclude that all the companies that participated in this study have an FSMS in place, and that the majority of food companies in South Africa within the Western Cape have an FSMS in place. The FSSC standard, which is the most modern and up-to-date standard, is the identified FSMS now employed by the majority of food processing organisations.

Objective 3

Given that GMPs are effective and contribute to team involvement, it is reasonable to assume that PRPs/GMPs constitute the cornerstone of the FSMS system for food company's and contribute to certification compliance. This is supported by 95% agreement of participating companies' respondents.

Objective 4

It can be confirmed that GMPs and PRPs practiced and employed by a company have a positive impact on the organisational performance and compliance to QMS.

Objective 5

The use of GMPs and PRPs has a favourable impact on organisational performance and QMS compliance; thus, there may be a link between the impact of a company's organisational structure on QMS management and organisational performance. The data provided by the respondents was not comprehensive enough to be able to establish the ideal organisational structure. The South African organisational structure that is committed to QMS might be further explored and investigated.

6.2 Research Findings

The findings of the research are as follows:

- The literature in the field of this study was not available in the setting of South Africa.
- There is no specific literature on the influence of organisational structure on corporate performance and quality in the food industry.
- The available research was not particular to the food business.
- There has been little or no research on organisational performance and structure in the food and packaging industries.

Research questionnaire:

- The ± 41 questionnaires distributed to various food manufacturing and packaging companies were completed only by the Quality and Food safety representative or management and not the top management or operational staff.
- It was discovered that the questionnaire was too lengthy to complete, so it cannot be validated with assurance that the answers provided

are a real reflection of each organisation. They may have been completed hurriedly.

- The quality representatives did not understand the terminology of organisational structure.
    - They were unclear where to indicate which organisational structure would best suit their company and which organisational structure they currently have in place.
- Participants in this research study were mostly quality representatives from the food industry. As a result, top and lower management were not included in this poll, which may have resulted in a negative perception of quality representatives.
- The rest of the questions were well assessed, allowing us to conclude that the food safety and quality management system is efficiently administered by PRPs.
- The survey questionnaire should have been divided into the following sections to identify the key focus area within this investigation:
    - Small, medium and large businesses (corporate and small businesses); and
    - Certified and non-certified businesses.

6.3 Limitations of the research

Only 31 survey questionnaires were completed because the research study was limited to the food and packaging businesses.

This study was only confined to high-quality representatives; if more delegates from various ranks had been compelled to participate, a better result and stronger comparison may have been obtained.

The scope of this investigation was limited to just certified food producing companies.

6.4 Future research

It is suggested that the following questions and areas of focus be investigated in the future to provide additional insight on the subject:

- A comprehensive description and interpretation of organisational structure.
    - This can be accomplished by an interview to ascertain whether or not the participant knows the terminology
- To examine and investigate other examples of the diverse organisational systems seen in the food sector.
- To concentrate on the most well-known organisational structures and handle each one separately.
- To have not only the company's quality representative complete the questionnaire, but also top management and lower-level staff, so that a correlation on understanding can be analysed.

6.5 Summary

- This chapter concludes the discussion of the impact of organisational structure on business performance and quality in the food sector. This chapter offers a summary of the numerous chapters of this dissertation, conclusions and recommendations on the subject, as well as study constraints, and has offered proposals for future research on organisational structure design within the food industry. The key question that served as the cornerstone for this study was successfully answered by the research endeavour. It is possible to conclude that QMS/FSMS compliance and organisational performance in the food industry are effective as a result of the effective execution of GMP/PRP programmes.

- According to the research findings, the quality representatives did not understand the terminology of organisational structure; hence they were unable to answer which organisational structure would suit their company best and which organisational structure they currently have in place.

According to the study's suggestions, more research is needed to discover the most suitable organisational structural design within the South African food industry, which will best impact company performance and quality.

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APPENDIX A: SURVEY QUESTIONNAIRE

QUESTIONNAIRE: IMPACT OF ORGANISATIONAL STRUCTURE ON COMPANY PERFORMANCE AND QUALITY WITHIN THE FOOD INDUSTRY – ORGANISATIONAL STRUCTURES ADOPTED WITHIN THE FSMS

The main goal of this survey is to determine impact of an organisational structure on a company's quality management performance. Furthermore, the survey aims to identify commonly adopted organisational structures within the Food Manufacturing Industry. The findings will be used to communicate the best suitable organisational structure to improve overall performance and quality within company productivity.

To investigate the importance of the adoption of an organisational structure within a Food Safety and Quality Management System, please complete this Survey Questionnaire and return it to Charlene Jardine (charlenejardine601@gmail.com).

Instructions on answering the questionnaire

 For Likert scale type statements, indicate your answers with an (X) in the appropriate box. Likert Employees scale – The questions with blank blocks must be rated according to the Likert scale:

5) Strongly Agree	4) Agree	3) Neutral	2) Disagree	1) Strongly Disagree

 For multiple choice questions / selections of questions, circle your chosen answer. For the open-ended questions, express yourself freely.

Section A: Company Details

To establish the general profile of the Enterprise and Respondent

A) Quality Management System (QMS) / Food Safety Management System (FSMS)

Type of Business	Food Manufacturing & Distribution		Food Retailer		Other, e.g. Food Packaging
What type of products does your company manufacture? ……					
How old is the Business	More than 30	20-30 Year	10-20 Years	5-10 Years	< 5 Year
Approximate Number of	250 and more	125-250	75-125	25-75	1-25
Do you have staff employed to oversee quality within your organisation?	Yes		No		
Does the organisation have any continuous improvement program, QMS or FSMS in place?	Yes		No		

If Yes, please specify? Please indicate	FSSC 22000	GSFI Standard or equivalent	ISO 22000	BRC	HACCPX	Other
Other; Please specify: …….						
If yes to the above, how long is this FSMS / QMS system operational?	More than 15 Years	10-15 Years	5-10 Years	1-5 Years	Less than 1 year	
Food Safety and Quality Certification: Was this a business decision or a customer requirement	Business	Business & Customer	Customer			

If you have not implemented FSMS / QMS or any other continuous improvement program yet:

- Have you heard about FSMS / QMS before: **Yes / No?**
- Do you think FSMS / QMS will be helpful for your organisation, please elaborate?

……

- Do you have future plans to implement a FSMS / QMS System in the future?

……Yes/No……

- Planned Date: …… (if applicable)

Section B: Organisational Structure: Reporting Structure					
Please indicate on a scale from 5 -1 if you are satisfied with the current reporting structure in your company.	5 - Strongly Agree	4 - Agree	3 - Neutral	2 - Disagree	1- Strongly Disagree
What is your understanding of an organisational structure?	Diagram describing reporting relationship and formal arrangement of work positions which include: Supervisor relationship, Communication Channel, Levels of management, the division of work and major subunits		It is a diagram that just indicates authority and is only Important to Top Management	It is a diagram that explains where you should work and who you should report to	Don't Know
Delegation of Authority within your organisation: How is authority currently distributed throughout your Organisation?	**Chain of Command**: Continues Line Authority that extends from upper organisation levels to the lowest levels and clarifies who reports to whom			**Span of Control:** Refers to the number of people who report to one manager / supervisor at a time	
Types of Organisational Structural Designs What type of reporting structure does your company currently have in place?	**Bureaucratic / Functional:** Divides the company based on specialty (A traditional business with a sales dep, marketing dep, customer service dep)		**Divisional:** Operates in a wide geographic area / have separate smaller organisation within the umbrella group to cover different types of products or market areas.		**Matrix:** Cross-functional organisation overlay that creates multiple lines of authority and places people in teams

Other:

……

In your opinion which of the following would best fits your organisation? Centralized, Decentralized or Hybrid : Hybrid	**Centralized:** Organisation is led by a corporate quality team that manages high-level goals and initiatives across the enterprise	**Decentralized**: Process of distributing authority throughout the organisation. It delegates an organisation member the right to decide without obtaining approval from a higher-level manager		**Hybrid:** Managing only the global processes that can deliver the benefits of the centralized approach, while leaving the local parts of quality management that deliver the benefits of a decentralized approach	
With the above explanations, what do you think your company currently has in place?	Centralized X	Decentralized	Hybrid	Not sure / Don't know / Never heard of these terms	

Section C: Quality Management System (QMS) / Food Safety Management System (FSMS)

The cornerstone of a successful organisation is an effective FSMS / QMS.	5 - Strongly Agree	4 - Agree	3 - Neutral	2 - Disagree	1- Strongly Disagree
A good QMS will reduce waste, improve process control and product quality, increase market share, lower costs, facilitate training and meet customer requirements and expectations.	5 - Strongly Agree \	4 - Agree	3 - Neutral	2 - Disagree	1- Strongly Disagree
QMS is not a one size fits all approach and ultimately it is the customer/client that determines what is needed for your QMS.	5 - Strongly Agree	4 - Agree	3 - Neutral	2 - Disagree	1- Strongly Disagree
QMS necessitates continuous data collection and analysis in order to make accurate predictions and informed decisions with regards to QM.	5 - Strongly Agree	4 - Agree	3 - Neutral	2 - Disagree	1- Strongly Disagree

With your knowledge what FSMS is mostly adopted by food manufacturers in South Africa?	FSSC 22 000	ISO 22 000	BRC	GSFI Standard or equivalent	HACCP	Other

Other FSMS adopted within SA Please Specify:

……

Section D: Good Manufacturing Process (GMP) Compliance to FSMS – Aspects to Ensure Company is compliant					
An effective GMP program provides structure to a company's quality system to help produce safe and good quality product	5 - Strongly Agree	4 - Agree	3 - Neutral	2 - Disagree	1- Strongly Disagree
An effective GMP program can serve as a basis for instilling a quality discipline and culture into a manufacturing process.	5 - Strongly Agree	4 - Agree	3 - Neutral	2 - Disagree	1- Strongly Disagree
GMP provides benefits by reducing the operating cost of rework, customer rejects, complaints and it increases efficiencies and customer acceptance of products, therefore saving cost.	5 - Strongly Agree	4 - Agree	3 - Neutral	2 - Disagree	1- Strongly Disagree
Your last food safety audit report reflected team work involvement.	5 - Strongly Agree	4 - Agree	3 - Neutral	2 - Disagree	1- Strongly Disagree
Training employees in the GMP/PRP programs implemented, makes employees feel important to the process and encourages them to pay more attention to detail.	5 - Strongly Agree	4 - Agree	3 - Neutral	2 - Disagree	1- Strongly Disagree
Section E: Responsibility and Authority					
The person responsible for quality reports to: …… The owner of the business, family-owned business run by Mother and Father (co-owners) and Son Factory Manager. ……	The CEO/President or equivalent	The CEO of a Business Unit, the head of Operations (COO), or equivalent	The head of operations within a Business Unit or equivalent	Anybody below a Business Unit functional head	
Which division / department is responsible for quality in your organisation?	Quality control	Production and Technical / and Quality control	Production	All departments	Top Management / Not sure
In my company individual suggestions to improve quality are:	Regularly encourage, collected and rewarded	Regularly collected	Sometimes collected X	Not leveraged	I don't know
The Line Managers show responsibility and accountability to quality within their department.	5 - Strongly Agree	4 - Agree	3 – Neutral	2 - Disagree	1- Strongly Disagree
The incentive system for employees should include quality targets.	5 - Strongly Agree	4 - Agree	3 - Neutral	2 - Disagree	1- Strongly Disagree
Section F: Staff Training and Competency					

Section D: Good Manufacturing Process (GMP) Compliance to FSMS – Aspects to Ensure Company is compliant					
An effective GMP program provides structure to a company's quality system to help produce safe and good quality product	5 - Strongly Agree	4 - Agree	3 - Neutral	2 - Disagree	1- Strongly Disagree
An effective GMP program can serve as a basis for instilling a quality discipline and culture into a manufacturing process.	5 - Strongly Agree	4 - Agree	3 - Neutral	2 - Disagree	1- Strongly Disagree
GMP provides benefits by reducing the operating cost of rework, customer rejects, complaints and it increases efficiencies and customer acceptance of products, therefore saving cost.	5 - Strongly Agree	4 - Agree	3 - Neutral	2 - Disagree	1- Strongly Disagree
Your last food safety audit report reflected team work involvement.	5 - Strongly Agree	4 - Agree	3 - Neutral	2 - Disagree	1- Strongly Disagree
Training employees in the GMP/PRP programs implemented, makes employees feel important to the process and encourages them to pay more attention to detail.	5 - Strongly Agree	4 - Agree	3 - Neutral	2 - Disagree	1- Strongly Disagree
Section E: Responsibility and Authority					
The person responsible for quality reports to: …… The owner of the business, family-owned business run by Mother and Father (co-owners) and Son Factory Manager. ……	The CEO/President or equivalent	The CEO of a Business Unit, the head of Operations (COO), or equivalent	The head of operations within a Business Unit or equivalent	Anybody below a Business Unit functional head	
Which division / department is responsible for quality in your organisation?	Quality control	Production and Technical / and Quality control	Production	All departments	Top Management	Not sure
In my company individual suggestions to improve quality are:	Regularly encourage, collected and rewarded	Regularly collected	Sometimes collected X	Not leveraged	I don't know	
The Line Managers show responsibility and accountability to quality within their department.	5 - Strongly Agree	4 - Agree	3 – Neutral	2 - Disagree	1- Strongly Disagree	
The incentive system for employees should include quality targets.	5 - Strongly Agree	4 - Agree	3 - Neutral	2 - Disagree	1- Strongly Disagree	
Section F: Staff Training and Competency					

I am aware of my role within the Food Safety and Quality Management System.	5 - Strongly Agree	4 - Agree	3 - Neutral	2 - Disagree	1- Strongly Disagree
Competency training within your organisation is effective.	5 - Strongly Agree	4 - Agree	3 - Neutral	2 – Disagree	1- Strongly Disagree
Inadequate training of workers is a major cause of defects of poor quality in your company.	5 - Strongly Agree	4 - Agree	3 - Neutral	2 - Disagree	1- Strongly Disagree
Inadequate knowledge and understanding about quality management is a major barrier for implementation of a quality management system.	5 - Strongly Agree	4 - Agree	3 - Neutral	2 - Disagree	1- Strongly Disagree
Training and development of staff down to floor level is integral to effective QMS implementation.	5 - Strongly Agree	4 - Agree	3 - Neutral	2 - Disagree	1- Strongly Disagree
Section G: Top Management / Management Commitment and Communication					
The current FSMS within my organisation is understood and acknowledged from Top Management to the lowest level e.g., cleaning staff	5 - Strongly Agree	4 - Agree	3 - Neutral	2 - Disagree	1- Strongly Disagree
Major cause of poor quality and barriers influencing implementation of quality management system is caused by lack of commitment shown by Management.	5 - Strongly Agree	4 – Agree	3 - Neutral	2 - Disagree	1- Strongly Disagree
Quality is considered as a strategic issue and Top Management is actively involved in managing the quality in your company.	5 - Strongly Agree	4 - Agree	3 - Neutral	2 - Disagree	1- Strongly Disagree
Internal Quality Communication in my company occurs when quality issues arise and is the key element of our overall internal quality communication plan.	5 - Strongly Agree	4 - Agree	3 - Neutral	2 - Disagree	1- Strongly Disagree
External Quality Communication in my company used quality as a key influencing and factor for all customer segments.	5 - Strongly Agree	4 - Agree	3 - Neutral	2 - Disagree	1- Strongly Disagree
Section H: Customer Service / Customer Complaints					
Customers are satisfied with the quality of the product and the quality of services delivered.	5 - Strongly Agree	4 - Agree	3 - Neutral	2 - Disagree	1- Strongly Disagree
Customer complaints related to quality are dealt with as top priority within our organisation.	5 - Strongly Agree	4 - Agree	3 - Neutral	2 - Disagree	1- Strongly Disagree
The organisation deems it unacceptable to deliver non-conforming product to	5 - Strongly Agree	4 - Agree	3 - Neutral	2 - Disagree	1- Strongly Disagree

Section I: Competency: Staff Behaviour / Cultural Behaviour					
Fear and resistance to change is one of the major barriers for implementation of quality management system.	5 - Strongly Agree	4 - Agree	3 - Neutral	2 - Disagree	1- Strongly Disagree
The organisation encourages general workers to suggest and explore new methods to improve product quality.	5 - Strongly Agree	4 - Agree	3 - Neutral	2 - Disagree	1- Strongly Disagree
Employee involvement is critical to successful QMS implementation.	5 - Strongly Agree	4 - Agree	3 - Neutral	2 - Disagree	1- Strongly Disagree
Section J: Performance Measurement and Cost of Quality					
Quality Performance is used as a criterion for evaluating business performance.	5 - Strongly Agree	4 - Agree	3 - Neutral	2 - Disagree	1- Strongly Disagree

Explain my company's quality targets:

1. I don't know.
2. Are mainly focused on regulatory compliance and do not include customer requirements.
3. Include some key customer requirements beside regulatory compliance.
4. Fully cover customer requirements and regulatory compliance.
5. Are fully comprehensive and based on a deep understanding of cost-quality trade-offs

In my company, the quality goal tracking through KPIs is:

1. I don't know.
2. Yearly. Not systematic in terms of data consolidation and communication of results. Performance discussions/reviews are not in place.
3. Quarterly with regular updates, consolidation process is mainly manual. Regular performance discussions/reviews for top management are in place
4. Monthly through an IT-based system transparent to most employees. Regular performance discussions/reviews for line management are in place.
5. Weekly through an IT-based system transparent to all employees, who participate in regular performance discussions/reviews

Additional Comments:

Company / Designation:

Participant Name:

Participant Signature:

APPENDIX B: COVER AND CONSENT LETTER

Cape Peninsula University of Technology

CONSENT COVER LETTER FOR SURVEY RESEARCH

Impact of Organisational Structure on Company Performance and Quality within the Food Industry

Dear Participant,

I invite you to participate in a research study entitled**: Impact of Organisational Structure on Company Performance and Quality within the Food Industry.** I am currently enrolled in the at Cape Peninsula University of Technology, and am in the process of writing my Master's Dissertation.

The main goal of this survey is to determine impact of an organisational structure on a company's quality management performance. Furthermore, the survey aims to identify commonly adopted organisation structures within the FSMS. The findings will be used to communicate the best suitable organisational structure to improve overall performance and quality within company productivity.

Your participation in this research project is completely voluntary. You may decline altogether, or leave blank any questions you do not wish to answer. Your responses will remain confidential and anonymous. Data from this research will be kept under lock and key and reported only as a collective combined total. No one other than the researchers will know your individual answers to this questionnaire.

If you agree to participate in this project, please answer the questions on the questionnaire as best you can. Please return the questionnaire as soon as possible. Please complete this survey questionnaire and return it to Charlene Jardine (charlenejardine601@gmail.com) / or you can contact me at 084 824 9292.

If you have any questions about this project, feel free to contact *Charlene Jardine*.

Thank you for your assistance in this important endeavour.

Sincerely yours,

Organisation: Participant Acknowledgment

Can you please acknowledge that you will participate in this Questionnaire by signing this letter as a representative of your company?

Company : .....

Participant Name : .....

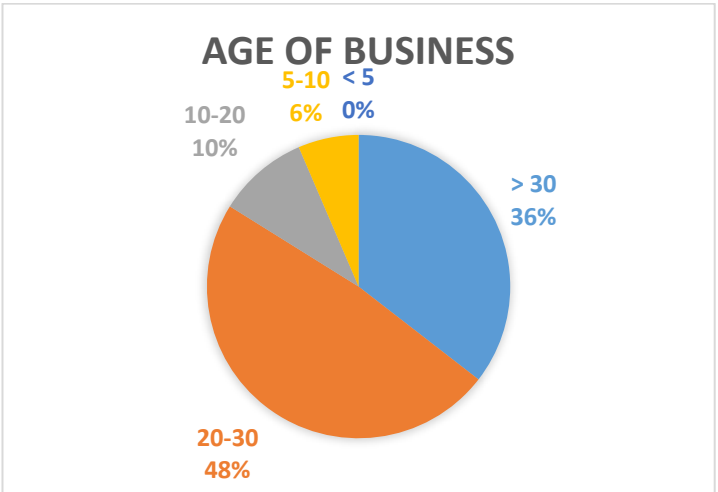
Participant Signature : .....

APPENDIX C: Data Analysis

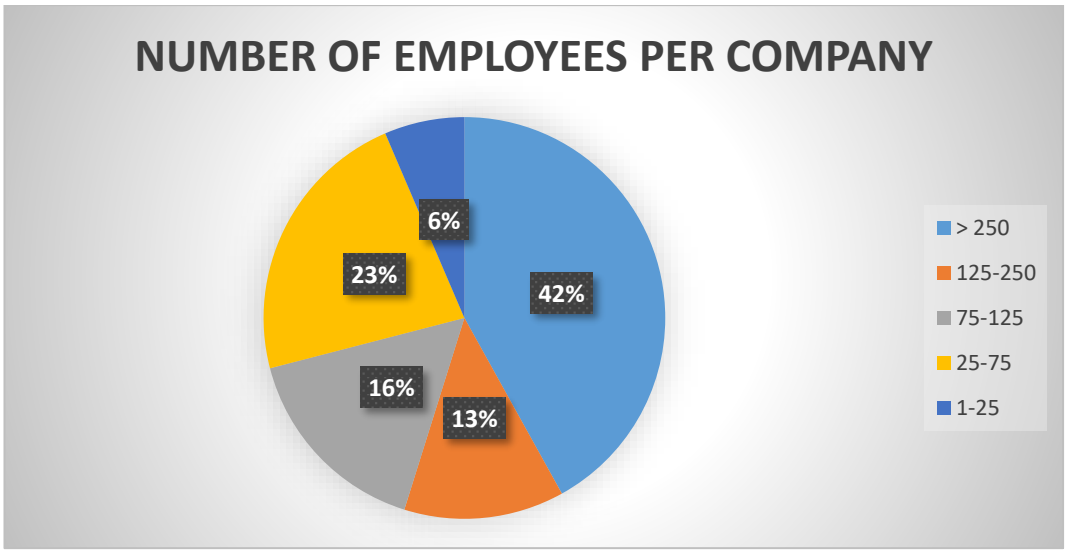
SECTION A: Company Details

	Section A - COMPANY DETAILS											
	1	2	3	4	5	6	7	8	9	10	11	
	Type of Business	Product Type	Age of Business	Number of Employees	Are Staff empoyed to oversee quality	QMS/FSMS	Certification(e.g. FSSC, ISO 22000)	How long is the QMS/FSMS operational	Was this a business decision (yes/no)	Company Name	Questionnaire Completed by	
1	Food Manufaturing & Distribution	Bulk Wine Export	10-20	1-25	Yes	Yes	FSSC 22000	5-10	Business & Customer	First Cape Vineyards	Quality	Bennii Van Rooy
2	Food Manufaturing & Distribution	IQF Fruit & Vegetables	20-30	75-125	Yes	Yes	HACCP	5-10	Business & Customer	Euroberry SA	Quality	Jonahtan Koeberg
3	Other, e.g Food Packaging	Wine Treatment and Bottling	20-30	25-75	Yes	Yes	BRC	10-15	Business & Customer	Quality Bottling Services CC	Quality	Walter Fleitmann
4	Food Manufaturing & Distribution	Deli Meats, Cheeses	20-30	> 250	Yes	Yes	FSSC 22000	1-5	Business & Customer	Rialto Foods	IMS/SHEQ Manager	Dr. Clint Brauns
5	Food Manufaturing & Distribution	Olive Oil , Olives, Pesto, Speciality Vinegar	20-30	25-75	Yes	Yes	FSSC 22000	1-5	Business & Customer	Willow Creek Products (Pty) Ltd	Quality	Hester De Wet
6	Food Manufaturing & Distribution	Long Life Beverages	20-30	> 250	Yes	Yes	FSSC 22000	10-15	Business & Customer	Rhodes Food Group	Quality	Sonja Le Roux
7	Food Manufaturing & Distribution	White and Red Wine	> 30	25-75	Yes	Yes	FSSC 22000	< 1	Business	Perdeberg Group	QC Production	Bernida Oliver
8	Food Manufaturing & Distribution	Eggs, including liquid Eggs	20-30	75-125	Yes	Yes	FSSC 22000	5-10	Business & Customer	Nulaid	SHEQ	Bronwyn Coghlan
9	Food Manufaturing & Distribution	Red, White and Rose Still Wine	20-30	25-75	Yes	Yes	GSFI Standard or equivalent	1-5	Business	Journeys Ends Brands (Pty) Ltd	Compliance	Wendy Wynand
10	Food Manufaturing & Distribution	Fish, Chicken, Beef Products	> 30	> 250	Yes	Yes	GSFI Standard or equivalent	>15	Business & Customer	Irvin & Johnson LTD (I&J)	Quality	Clifford Booysen
11	Food Manufaturing & Distribution	Fish	> 30	> 250	Yes	Yes	GSFI Standard or equivalent	>15	Business & Customer	Irvin & Johnson LTD (I&J)	Quality	Mr. B. Faulmann
12	Food Manufaturing & Distribution	Beef Meat Products	20-30	> 250	Yes	Yes	FSSC 22000	5-10	Business	Kamburg Beef	Production Manager	Arthur Masego
13	Food Manufaturing & Distribution	Snackole g Chips made from potatoes, corn and corn meal as well as flour)	> 30	> 250	Yes	Yes	FSSC 22000	>15	Business	Simba Parow	Quality	Astrid Perrins
14	Food Manufaturing & Distribution	Herbal Teas	20-30	125-250	Yes	Yes	FSSC 22000	10-15	Business	Cape Natural Tea Products	Quality	Michelle Brown
15	Food Manufaturing & Distribution	Honey	5-10	1-25	Yes	Yes	HACCP	5-10	Business & Customer	Brother Bees Honey	Quality	Cossi Mkhabela
16	Other, e.g Food Packaging	Metal Closures	> 30	> 250	Yes	Yes	FSSC 22000	5-10	Business	DivFoods	Manager	Gerrit Isaacs
17	Food Manufaturing & Distribution	Ready to Eat, Read to Heat and Ready to Cook Meals and products	20-30	> 250	Yes	Yes	FSSC 22000	>15	Business & Customer	In2Food - Lombardi (Strand)	Technical / Quality	Simone Stevens
18	Food Manufaturing & Distribution	Value Added Seafood / Fish Products	20-30	125-250	Yes	Yes	FSSC 22000	10-15	Business & Customer	In2Food - Garon Foods (Killarney Gardens)	Technical / Food Safety	Raquel Arendse
19	Food Manufaturing & Distribution	Meat Products	> 30	> 250	Yes	Yes	FSSC 22000	1-5	Business & Customer	Excellent Meats	Quality	Raadiyah Martin
20	Food Manufaturing & Distribution	Spices and Herbs	20-30	> 250	Yes	Yes	BRC	>15	Business & Customer	Cape Herbs & Spices	Quality	Barishka Sam
21	Other, e.g Food Packaging	Corks (for wine)	> 30	25-75	Yes	Yes	BRC	5-10	Business	Amorim Cork	Quality / Production Manager	Sinetemba NeoImfu
22	Food Manufaturing & Distribution	Alcoholic Beverages	5-10	25-75	Yes	Yes	FSSC 22000	1-5	Business	Natures Own Beverages (Pty) Ltd	Operations	Shannon Muller
23	Food Manufaturing & Distribution	Ready to heat and eat pizzas, read to eat salads, croutons, subs and ready to heat and eat soups	10-20	75-125	Yes	Yes	HACCP	10-15	Business & Customer	Annonymous (Papa's)	Quality Assurance Manager	Premilla Prag
24	Food Manufaturing & Distribution	Spices	20-30	25-75	Yes	Yes	FSSC 22000	>15	Business	Annonymous	Quality	Nomveliso Roto
25	Food Manufaturing & Distribution	Ambient Stable Products - condiments	> 30	75-125	Yes	Yes	FSSC 22000	5-10	Business & Customer	PioneerFoods Wellington Ambient (Pepsico)	Quality	Venessa Foster
26	Food Manufaturing & Distribution	Biscuit/Cookies, Chocolate, Gum candy, Meals, Beverages	> 30	> 250	Yes	Yes	FSSC 22000	10-15	Business & Customer	Mondelex International	Quality	Janine Muller
27	Food Manufaturing & Distribution	Fish, Frozend Fish products	> 30	> 250	Yes	Yes	BRC	1-5	Business & Customer	Sea Harvest	Quality	Venette McDillion
28	Food Manufaturing & Distribution	Dry Batters, Crumbs, Sauces, Glazes, Brine	20-30	125-250	Yes	Yes	FSSC 22000	5-10	Business & Customer	Bowmans Ingredients	Quality Assurance Manager	Bomkazi
29	Food Manufaturing & Distribution	Olive Oil, Jam Unit	10-20	75-125	Yes	Yes	FSSC 22000	5-10	Business	Tygerbrands	Quality	Annita Robertson
30	Food Manufaturing & Distribution	Food Importer	20-30	125-250	Yes	Yes	ISO 22000	< 1	Business & Customer	Rialto Foods	Quality	Janine McBain
31	Food Manufaturing & Distribution	Dairy and Juice bsed Consumer food	> 30	> 250	Yes	Yes	FSSC 22000	>15	Business	Clover Industries	Quality	Jakobus Etsebeth

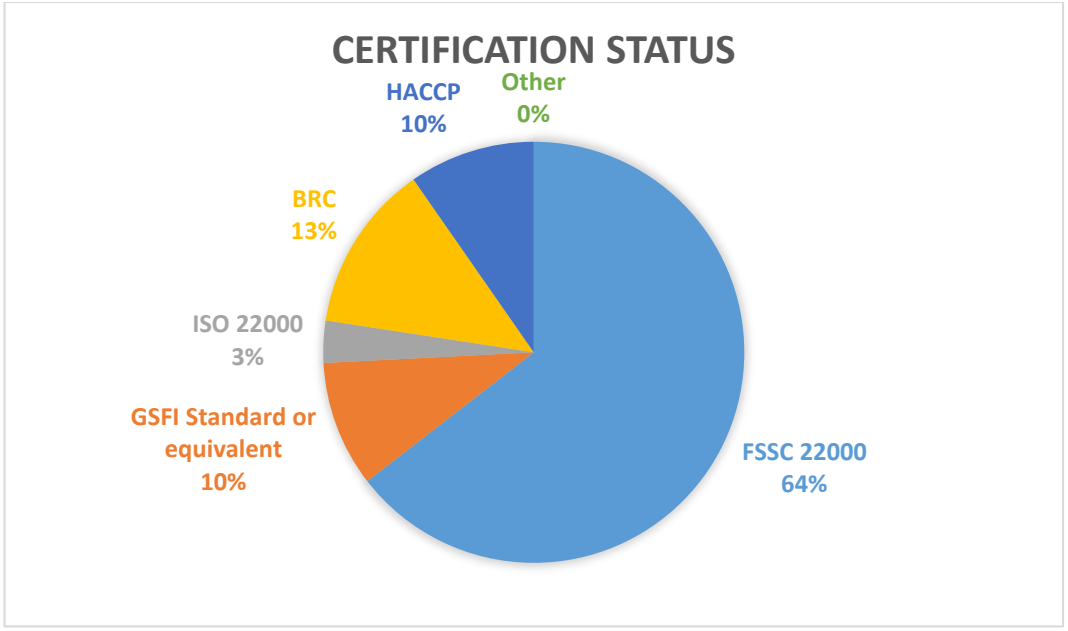
Age of Business (Years)		%
> 30	**11**	35,48
20-30	**15**	48,39
10-20	**3**	9,68
5-10	**2**	6,45
< 5	**0**	0,00
	31	100,00



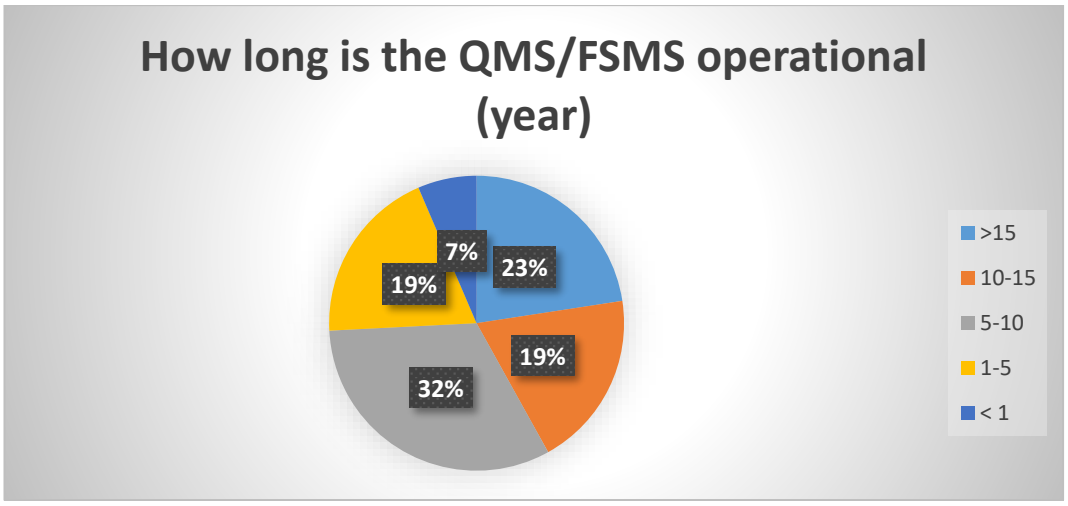
Number of Employees		%
> 250	13	41,94
125-250	4	12,90
75-125	5	16,13
25-75	7	22,58
1-25	2	6,45
	31	100,00



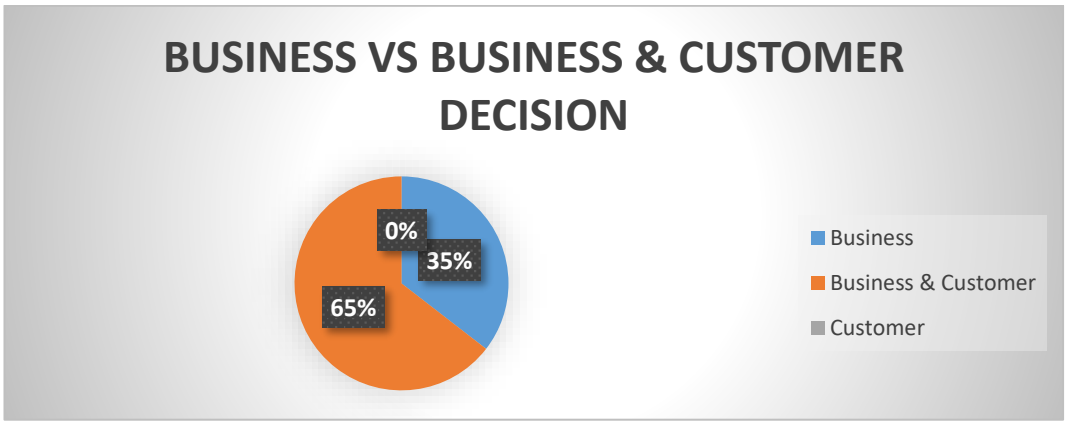
Certification(e.g. FSSC, ISO 22000)		%
FSSC 22000	20	64,52
GSFI Standard or equivalent	3	9,68
ISO 22000	1	3,23
BRC	4	12,90
HACCP	3	9,68
Other	0	0,00
	31	100



How long is the QMS/FSMS operational (year)		%
>15	7	22,58
10-15	6	19,35
5-10	10	32,26
1-5	6	19,35
< 1	2	6,45
	31	100,00



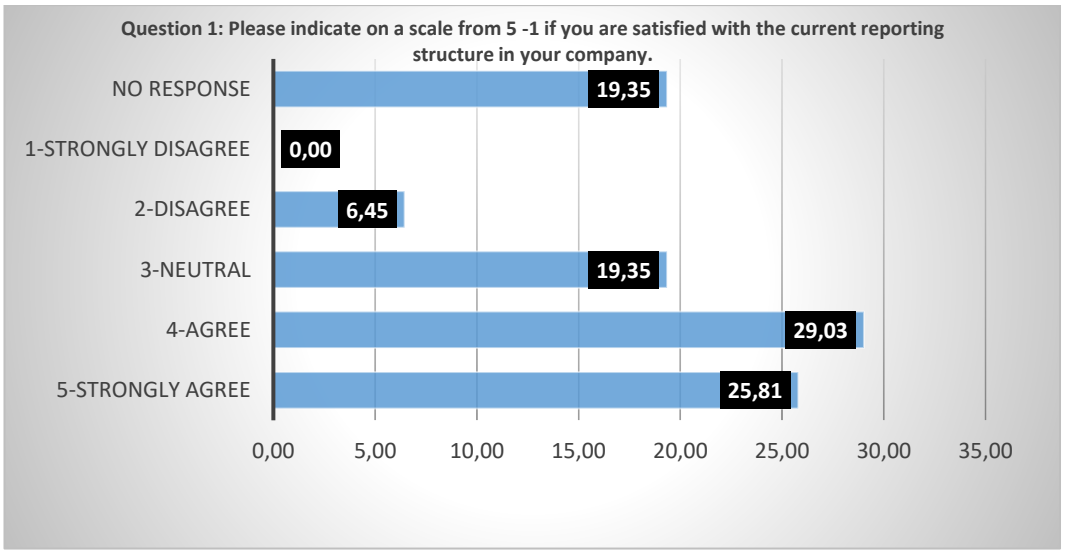
Was this a business / customer decision		%
Business	11	35,48
Business & Customer	20	64,52
Customer	0	0,00
	31	100,00



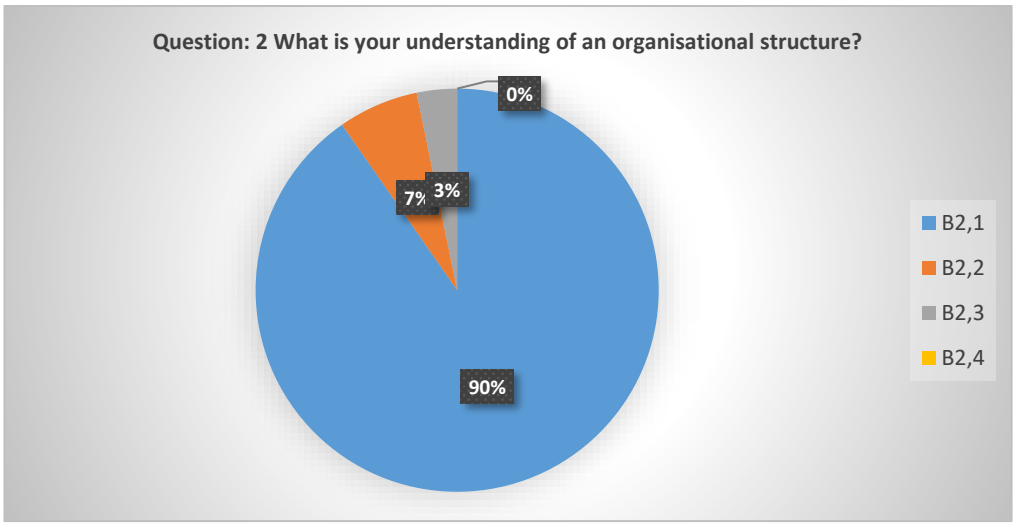
SECTION B: Organisational reporting structure

	Section B: ORGANISATIONAL STRUCTURE - REPORTING STRUCTURE					
Question	1	2	3	4	5	6
	Question 1	Question 2	Question 3	Question 4	Question 5	Question 6
1		B2,1	B3,1	B4,3		B6,2
2	4-Agree	B2,1	B3,1	B4,1	B5,2	
3	4-Agree	B2,1	B3,1	B4,1		B6,3
4	4-Agree	B2,1	B3,1	B4,2	B5,3	B6,3
5		B2,1	B3,1	B4,1	B5,2	B6,4
6		B2,3	B3,1	B4,3	B5,1	B6,1
7	4-Agree	B2,1	B3,1	B4,1	B5,1	B6,1
8	4-Agree	B2,1	B3,2	B4,2	B5,3	B6,2
9		B2,1	B3,1	B4,2	B5,3	B6,3
10	5-Strongly agree	B2,1	B3,1	B4,1	B5,3	B6,3
11	4-Agree	B2,1	B3,1	B4,1	B5,1	B6,1
12	5-Strongly agree	B2,1	B3,1	B4,1	B5,1	B6,1
13	2-Disagree	B2,1	B3,1	B4,1	B5,1	B6,1
14	5-Strongly agree	B2,1	B3,1	B4,2		B6,2
15	5-Strongly agree	B2,1	B3,2	B4,1		B6,1
16	4-Agree	B2,2	B3,1	B4,2	B5,1	B6,1
17	5-Strongly agree	B2,1	B3,1	B4,2	B5,1	B6,1
18	3-Neutral	B2,1	B3,2	B4,2	B5,3	B6,3
19	3-Neutral	B2,2	B3,2	B4,2		B6,3
20	4-Agree	B2,1	B3,1	B4,1		B6,4
21	3-Neutral	B2,1	B3,1	B4,2		B6,1
22	4-Agree	B2,1	B3,2	B4,3	B5,1	B6,1
23	2-Disagree	B2,1	B3,2			B6,1
24	5-Strongly agree	B2,1	B3,1	B4,1	B5,1	B6,1
25		B2,1	B3,1	B4,3		B6,1
26	5-Strongly agree	B2,1	B3,1	B4,2		B6,4
27	3-Neutral	B2,1	B3,1	B4,3	B5,1	B6,1
28	3-Neutral	B2,1	B3,1	B4,1		B6,1
29		B2,1	B3,1			B6,4
30	3-Neutral	B2,1	B3,1	B4,2	B5,1	B6,2
31	5-Strongly agree	B2,1	B3,1	B4,1	B5,3	B6,3

Question 1		%
5-Strongly agree	8	25,81
4-Agree	9	29,03
3-Neutral	6	19,35
2-Disagree	2	6,45
1-Strongly disagree	0	0,00
No response	6	19,35
	31	100,00

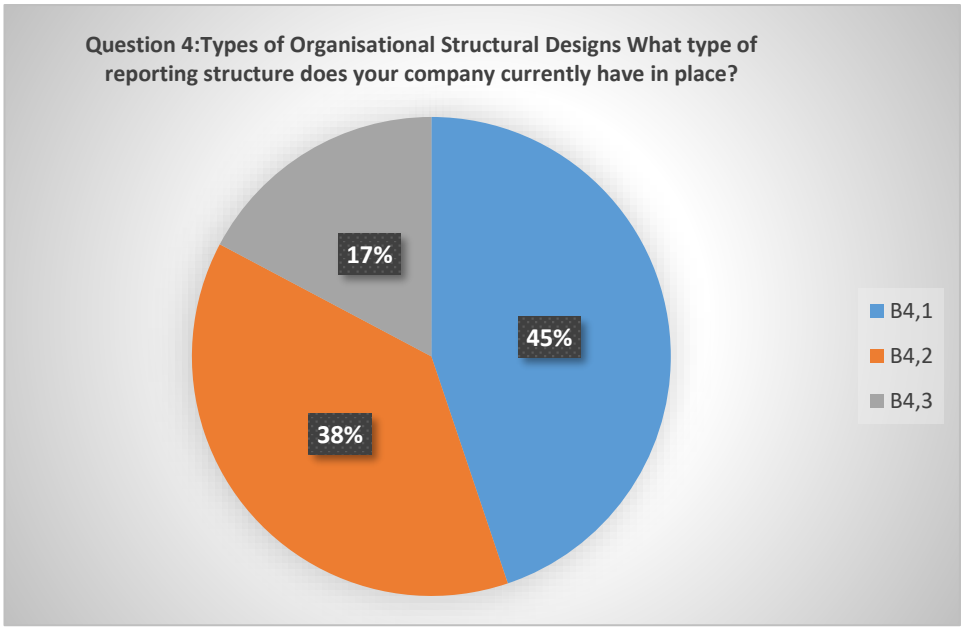


Question 2		%
B2,1	28	90,32
B2,2	2	6,45
B2,3	1	3,23
B2,4	0	0,00
	31	100,00

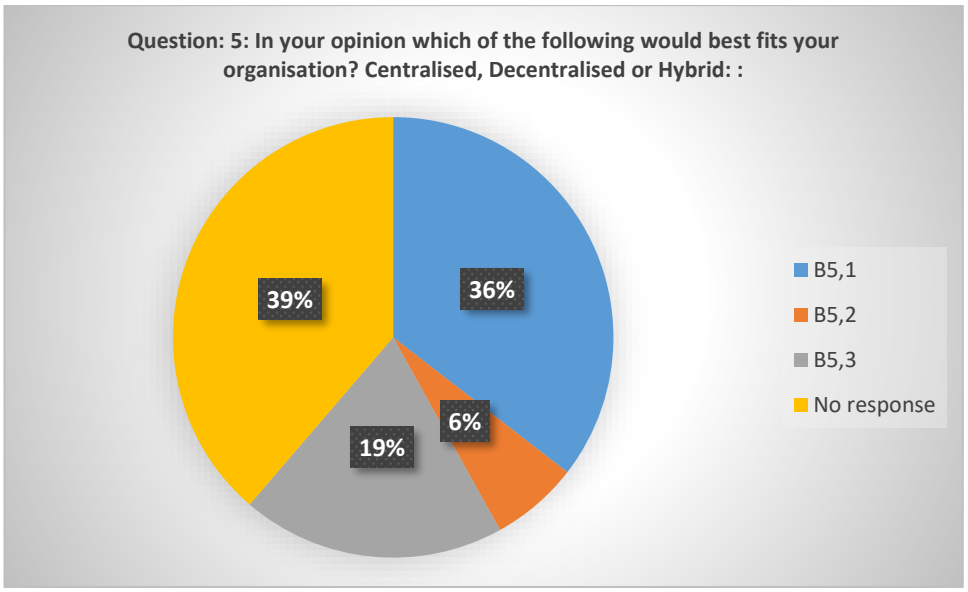


Question 3		%
B3,1	25	80,65
B3,2	6	19,35
	31	100,00

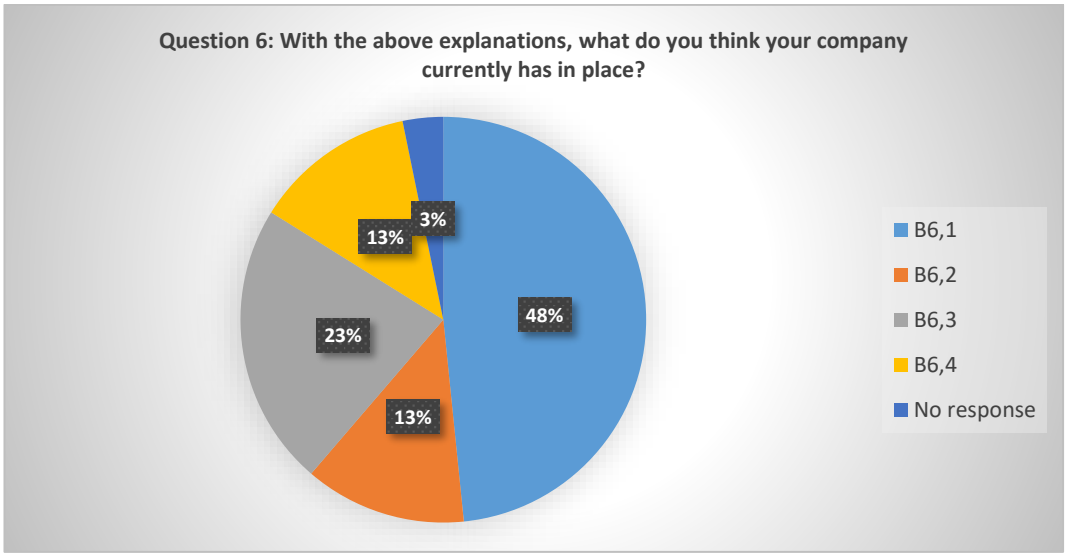
Question 4		%
B4,1	13	41,94
B4,2	11	35,48
B4,3	5	16,13
No response	2	
	31	93,55



Question 5		%
B5,1	11	35,48
B5,2	2	6,45
B5,3	6	19,35
No response	12	38,71
	31	100,00



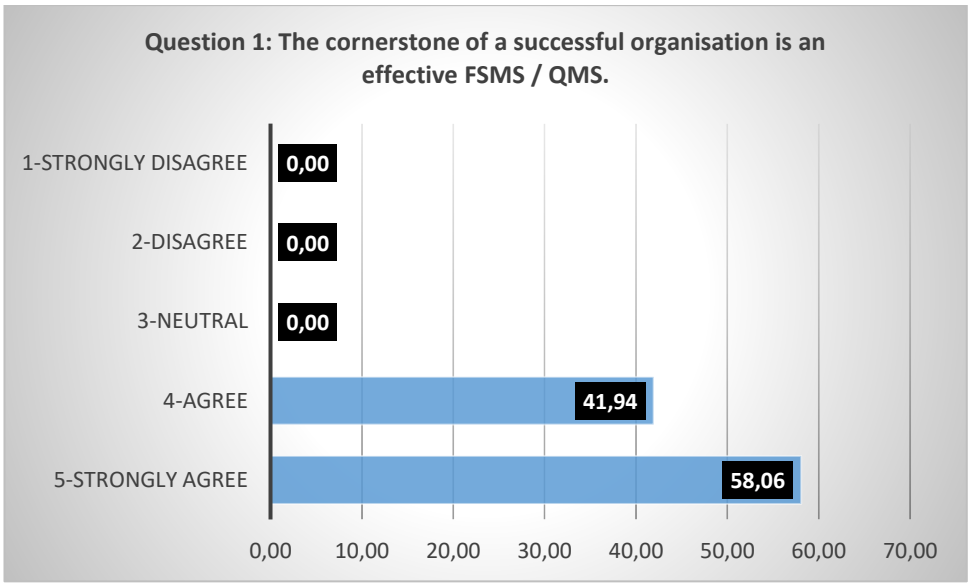
Question 6		%
B6,1	15	48,39
B6,2	4	12,90
B6,3	7	22,58
B6,4	4	12,90
No response	1	3,23
	31	100,00



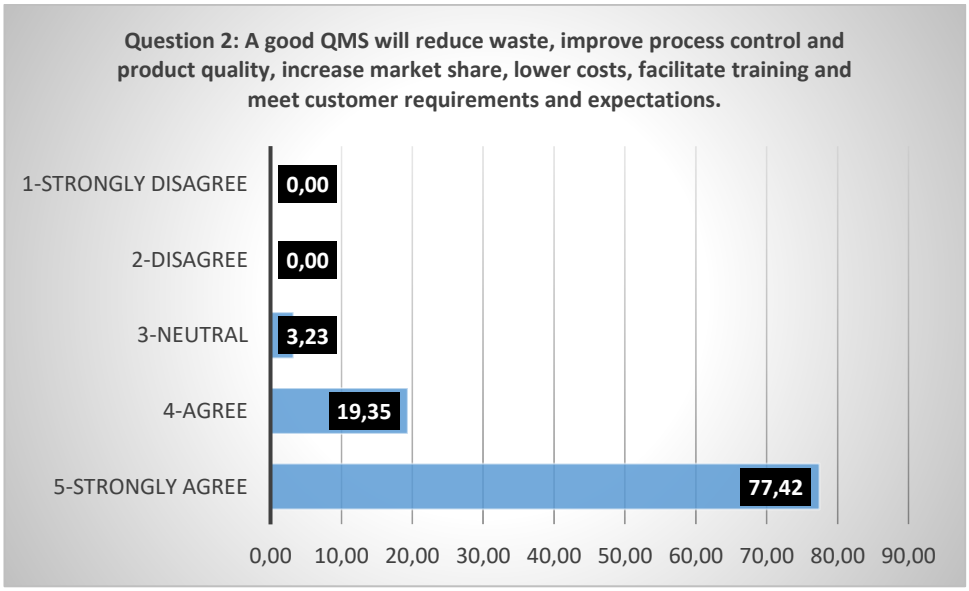
SECTION C: QMS/FSMS

	Section C: QUALITY MANAGEMENT SYSTEM (QMS) / FOOD SAFETY MANAGEMENT SYSTEM (FSMS)				
Question	1	2	3	4	5
	Question 1	**Question 2**	**Question 3**	**Question 4**	**Question 5**
1	4-Agree	4-Agree	5-Strongly agree	5-Strongly agree	C5,4
2	4-Agree	4-Agree	2-Disagree	4-Agree	C5,1
3	5-Strongly agree	5-Strongly agree	2-Disagree	4-Agree	C5,2
4	4-Agree	5-Strongly agree	5-Strongly agree	5-Strongly agree	C5,1
5	5-Strongly agree	5-Strongly agree	2-Disagree	5-Strongly agree	C5,1
6	5-Strongly agree	5-Strongly agree	4-Agree	4-Agree	C5,1
7	4-Agree	5-Strongly agree	2-Disagree	4-Agree	C5,1
8	4-Agree	4-Agree	4-Agree	5-Strongly agree	C5,1
9	5-Strongly agree	5-Strongly agree	4-Agree	4-Agree	C5,1
10	5-Strongly agree	5-Strongly agree	5-Strongly agree	5-Strongly agree	C5,1
11	5-Strongly agree	5-Strongly agree	5-Strongly agree	5-Strongly agree	C5,1
12	5-Strongly agree	5-Strongly agree	5-Strongly agree	5-Strongly agree	C5,1
13	4-Agree	5-Strongly agree	5-Strongly agree	5-Strongly agree	
14	4-Agree	5-Strongly agree	5-Strongly agree	5-Strongly agree	C5,1
15	5-Strongly agree	5-Strongly agree	4-Agree	3-Neutral	C5,5
16	5-Strongly agree	5-Strongly agree	5-Strongly agree	5-Strongly agree	C5,1
17	5-Strongly agree	3-Neutral	2-Disagree	5-Strongly agree	C5,2
18	5-Strongly agree	5-Strongly agree	4-Agree	4-Agree	C5,3
19	4-Agree	4-Agree	4-Agree	4-Agree	C5,1
20	5-Strongly agree	5-Strongly agree	5-Strongly agree	5-Strongly agree	C5,1
21	4-Agree	5-Strongly agree	4-Agree	4-Agree	C5,4
22	5-Strongly agree	5-Strongly agree	4-Agree	5-Strongly agree	C5,4
23	5-Strongly agree	5-Strongly agree	5-Strongly agree	5-Strongly agree	C5,1
24	5-Strongly agree	5-Strongly agree	3-Neutral	4-Agree	C5,1
25	4-Agree	5-Strongly agree	3-Neutral	4-Agree	C5,4
26	5-Strongly agree	5-Strongly agree	5-Strongly agree	5-Strongly agree	C5,5
27	4-Agree	4-Agree	3-Neutral	5-Strongly agree	C5,1
28	4-Agree	5-Strongly agree	5-Strongly agree	5-Strongly agree	C5,4
29	4-Agree	4-Agree	3-Neutral	4-Agree	C5,1
30	5-Strongly agree	5-Strongly agree	3-Neutral	4-Agree	C5,2
31	5-Strongly agree	5-Strongly agree	2-Disagree	5-Strongly agree	

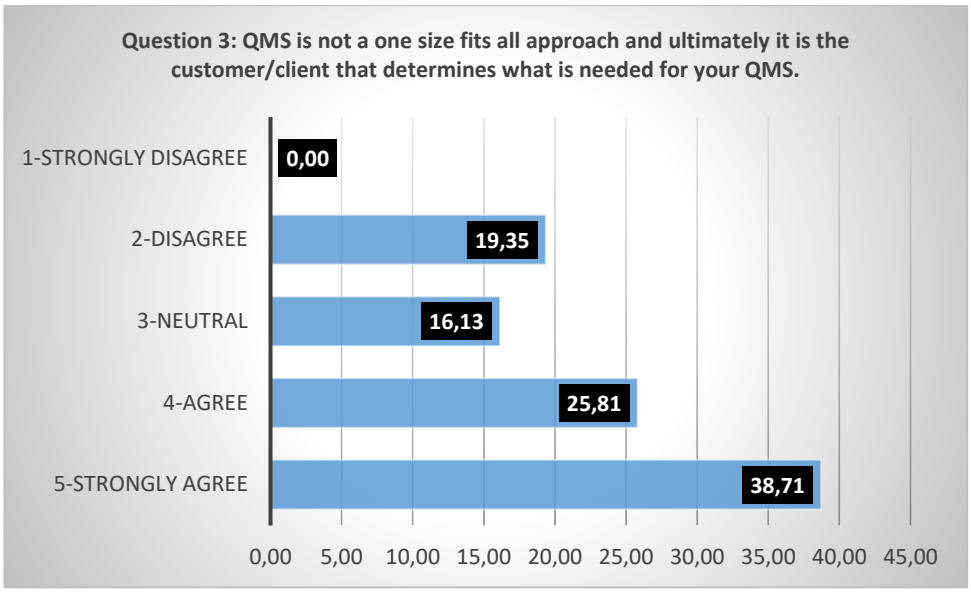
Question 1		%
5-Strongly agree	18	58,06
4-Agree	13	41,94
3-Neutral	0	0,00
2-Disagree	0	0,00
1-Strongly disagree	0	0,00
	31	100,00



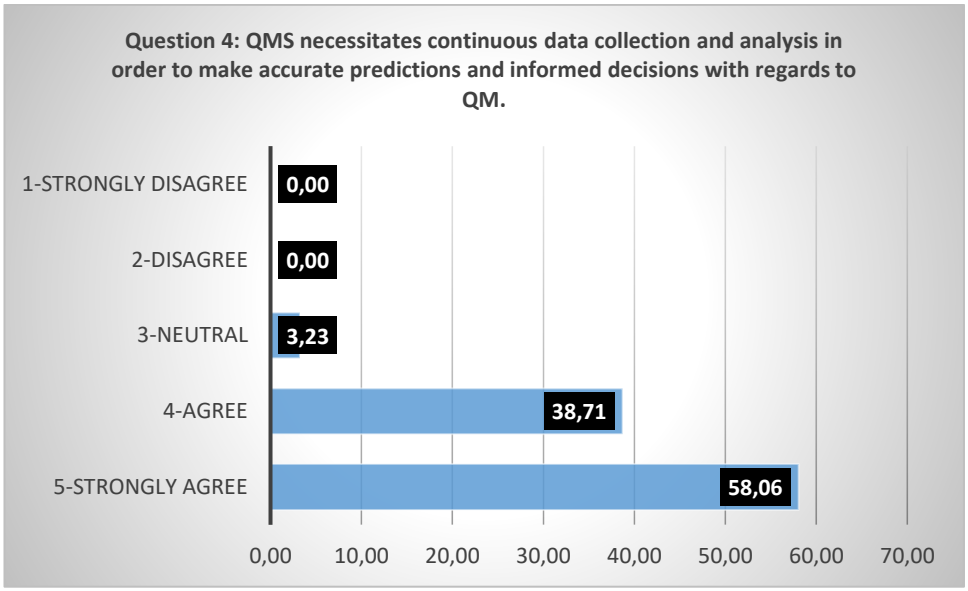
Question 2		%
5-Strongly agree	24	77,42
4-Agree	6	19,35
3-Neutral	1	3,23
2-Disagree	0	0,00
1-Strongly disagree	0	0,00
	31	100,00



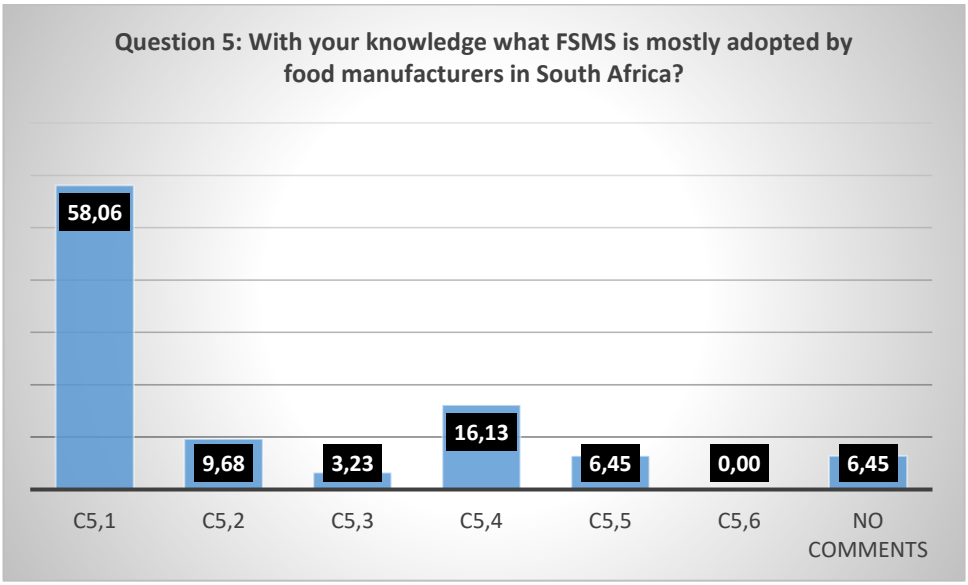
Question 3		%
5-Strongly agree	12	38,71
4-Agree	8	25,81
3-Neutral	5	16,13
2-Disagree	6	19,35
1-Strongly disagree	0	0,00
	31	100,00



Question 4		%
5-Strongly agree	18	58,06
4-Agree	12	38,71
3-Neutral	1	3,23
2-Disagree	0	0,00
1-Strongly disagree	0	0,00
	31	100,00



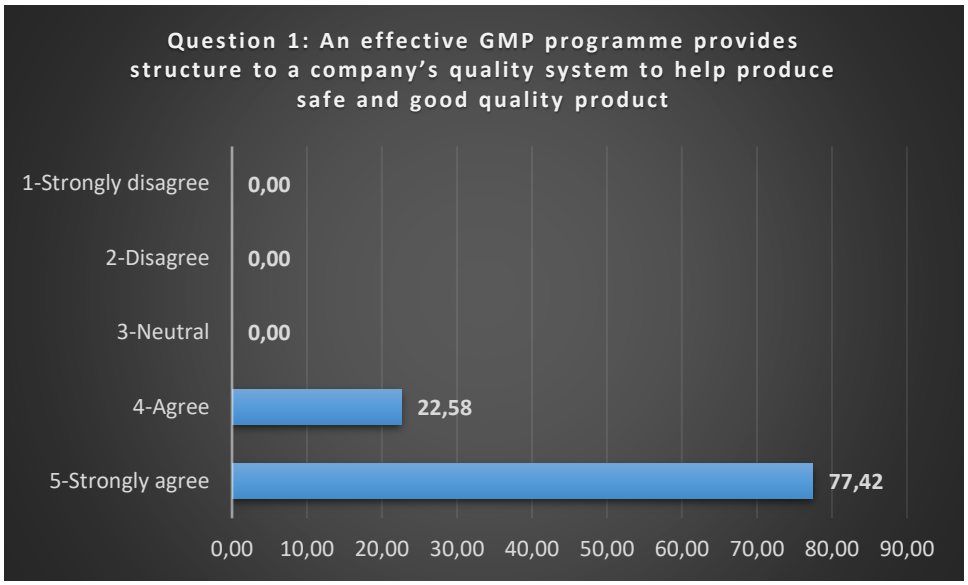
Question 5		%
C5,1	18	58,06
C5,2	3	9,68
C5,3	1	3,23
C5,4	5	16,13
C5,5	2	6,45
C5,6	0	0,00
No comments	2	6,45
	31	100,00



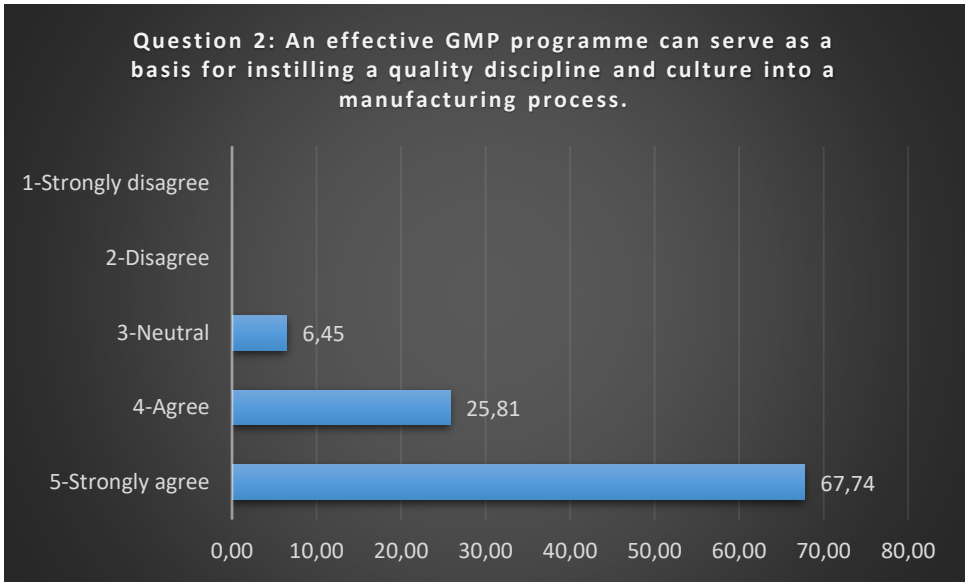
SECTION D: GMP compliance to FSMS

	Section D: GOOD MANUFACTURING PROCESS (GMP) COMPLIANCE TO FSMS - Aspects to Ensure Company is compliant				
Question	1	2	3	4	5
	Question 1	**Question 2**	**Question 3**	**Question 4**	**Question 5**
1	4-Agree	4-Agree	2-Disagree	3-Neutral	3-Neutral
2	4-Agree	4-Agree	4-Agree	4-Agree	4-Agree
3	5-Strongly agree	5-Strongly agree	5-Strongly agree	4-Agree	4-Agree
4	5-Strongly agree	5-Strongly agree	5-Strongly agree	4-Agree	5-Strongly agree
5	5-Strongly agree	5-Strongly agree	5-Strongly agree	5-Strongly agree	5-Strongly agree
6	5-Strongly agree	4-Agree	2-Disagree	3-Neutral	4-Agree
7	4-Agree	4-Agree	4-Agree	4-Agree	5-Strongly agree
8	4-Agree	4-Agree	5-Strongly agree	3-Neutral	5-Strongly agree
9	5-Strongly agree	5-Strongly agree	4-Agree	3-Neutral	5-Strongly agree
10	5-Strongly agree	5-Strongly agree	5-Strongly agree	5-Strongly agree	5-Strongly agree
11	5-Strongly agree	3-Neutral	5-Strongly agree	4-Agree	4-Agree
12	5-Strongly agree	5-Strongly agree	5-Strongly agree	5-Strongly agree	5-Strongly agree
13	5-Strongly agree	5-Strongly agree	5-Strongly agree	5-Strongly agree	3-Neutral
14	5-Strongly agree	5-Strongly agree	5-Strongly agree	5-Strongly agree	5-Strongly agree
15	5-Strongly agree	5-Strongly agree	5-Strongly agree	5-Strongly agree	5-Strongly agree
16	5-Strongly agree	5-Strongly agree	5-Strongly agree	4-Agree	4-Agree
17	5-Strongly agree	5-Strongly agree	5-Strongly agree	5-Strongly agree	5-Strongly agree
18	5-Strongly agree	5-Strongly agree	5-Strongly agree	4-Agree	3-Neutral
19	5-Strongly agree	5-Strongly agree	4-Agree	4-Agree	5-Strongly agree
20	5-Strongly agree	5-Strongly agree	5-Strongly agree	4-Agree	5-Strongly agree
21	5-Strongly agree	4-Agree	5-Strongly agree	4-Agree	5-Strongly agree
22	5-Strongly agree	5-Strongly agree	5-Strongly agree	5-Strongly agree	5-Strongly agree
23	4-Agree	5-Strongly agree	5-Strongly agree	2-Disagree	5-Strongly agree
24	5-Strongly agree	5-Strongly agree	5-Strongly agree	5-Strongly agree	4-Agree
25	4-Agree	4-Agree	3-Neutral	4-Agree	1-Strongly disagree
26	5-Strongly agree	5-Strongly agree	5-Strongly agree	4-Agree	4-Agree
27	5-Strongly agree	3-Neutral	4-Agree	5-Strongly agree	5-Strongly agree
28	5-Strongly agree	5-Strongly agree	5-Strongly agree	5-Strongly agree	5-Strongly agree
29	4-Agree	4-Agree	4-Agree	4-Agree	5-Strongly agree
30	5-Strongly agree	5-Strongly agree	5-Strongly agree	4-Agree	4-Agree
31	5-Strongly agree	5-Strongly agree	5-Strongly agree	5-Strongly agree	5-Strongly agree

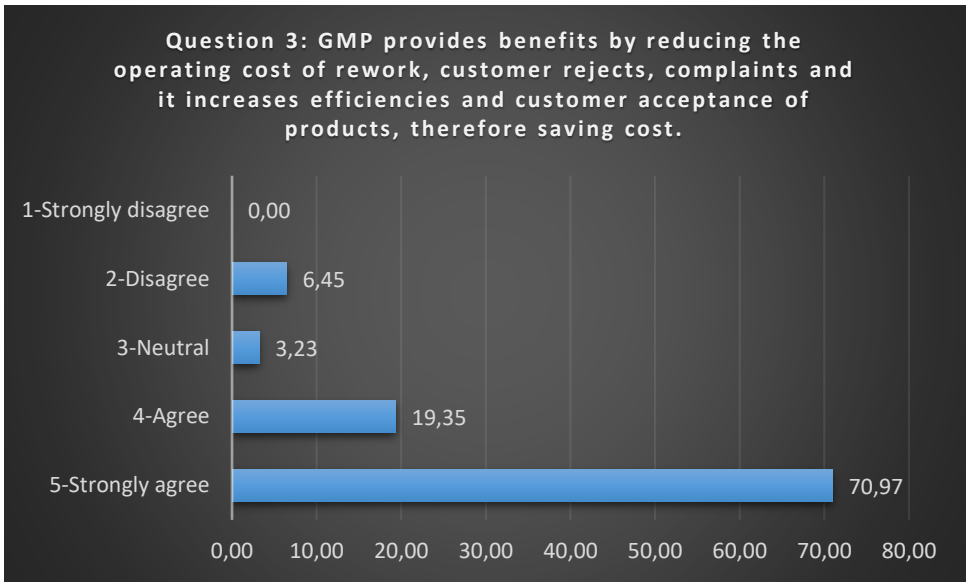
Question 1		%
5-Strongly agree	24	77,42
4-Agree	7	22,58
3-Neutral	0	0,00
2-Disagree	0	0,00
1-Strongly disagree	0	0,00
	31	100,00



Question 2		%
5-Strongly agree	21	67,74
4-Agree	8	25,81
3-Neutral	2	6,45
2-Disagree	0	0,00
1-Strongly disagree	0	0,00
	31	100,00

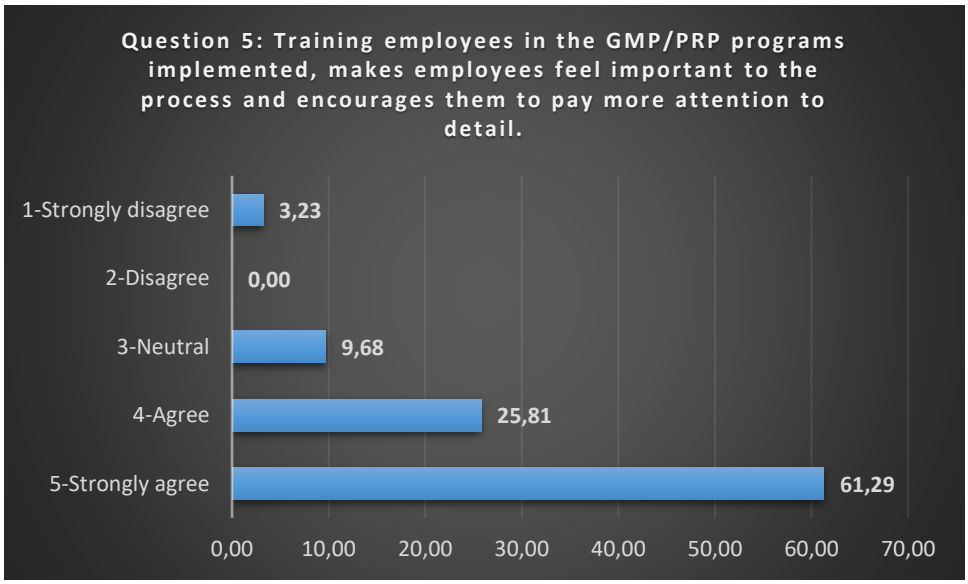


Question 3		%
5-Strongly agree	22	70,97
4-Agree	6	19,35
3-Neutral	1	3,23
2-Disagree	2	6,45
1-Strongly disagree	0	0,00
	31	100,00



Question 4		%
5-Strongly agree	12	38,71
4-Agree	14	45,16
3-Neutral	4	12,90
2-Disagree	1	3,23
1-Strongly disagree	0	0,00
	31	100,00

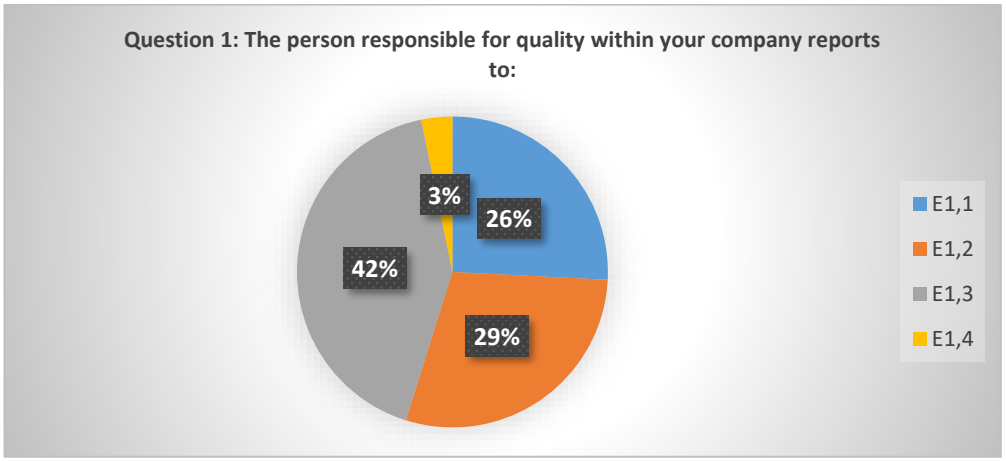
Question 5		%
5-Strongly agree	19	61,29
4-Agree	8	25,81
3-Neutral	3	9,68
2-Disagree	0	0,00
1-Strongly disagree	1	3,23
	31	100,00



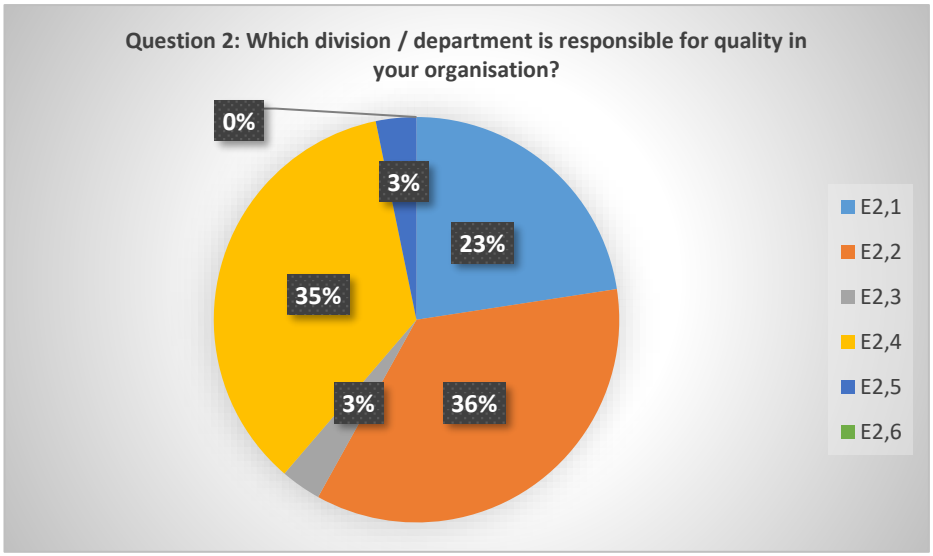
SECTION E: Responsibility and authority

	Section E: RESPONSIBILITY AND AUTHORITY				
Question	1	2	3	4	5
	Question 1	**Question 2**	**Question 3**	**Question 4**	**Question 5**
1	E1,2	E2,2	E3,1	4-Agree	4-Agree
2	E1,2	E2,1	E3,1	4-Agree	5-Strongly agree
3	E1,3	E2,4	E3,3	4-Agree	4-Agree
4	E1,3	E2,1	E3,2	4-Agree	5-Strongly agree
5	E1,2	E2,2	E3,2	3-Neutral	5-Strongly agree
6	E1,3	E2,1	E3,3	3-Neutral	4-Agree
7	E1,2	E2,3	E3,3	4-Agree	5-Strongly agree
8	E1,3	E2,1	E3,3	4-Agree	5-Strongly agree
9	E1,3	E2,2	E3,4	4-Agree	4-Agree
10	E1,1	E2,2	E3,1	4-Agree	5-Strongly agree
11	E1,2	E2,4	E3,3	3-Neutral	5-Strongly agree
12	E1,3	E2,2	E3,2	4-Agree	5-Strongly agree
13	E1,3	E2,4	E3,1	2-Disagree	5-Strongly agree
14	E1,1	E2,4	E3,1	4-Agree	4-Agree
15	E1,1	E2,1	E3,2	4-Agree	4-Agree
16	E1,2	E2,5	E3,3	4-Agree	5-Strongly agree
17	E1,3	E2,4	E3,1	4-Agree	5-Strongly agree
18	E1,1	E2,2	E3,3	3-Neutral	5-Strongly agree
19	E1,3	E2,2	E3,2	4-Agree	5-Strongly agree
20	E1,1	E2,4	E3,1	4-Agree	5-Strongly agree
21	E1,3	E2,2	E3,2	4-Agree	5-Strongly agree
22	E1,1	E2,4	E3,2	4-Agree	5-Strongly agree
23	E1,1	E2,1	E3,3	4-Agree	5-Strongly agree
24	E1,2	E2,4	E3,2	4-Agree	5-Strongly agree
25	E1,3	E2,4	E3,1	4-Agree	4-Agree
26	E1,3	E2,4	E3,1	4-Agree	5-Strongly agree
27	E1,3	E2,1	E3,3	2-Disagree	5-Strongly agree
28		E2,4	E3,3	5-Strongly agree	5-Strongly agree
29	E1,2	E2,2	E3,1	5-Strongly agree	5-Strongly agree
30	E1,1	E2,2	E3,2	3-Neutral	4-Agree
31	E1,2	E2,2	E3,1	5-Strongly agree	5-Strongly agree

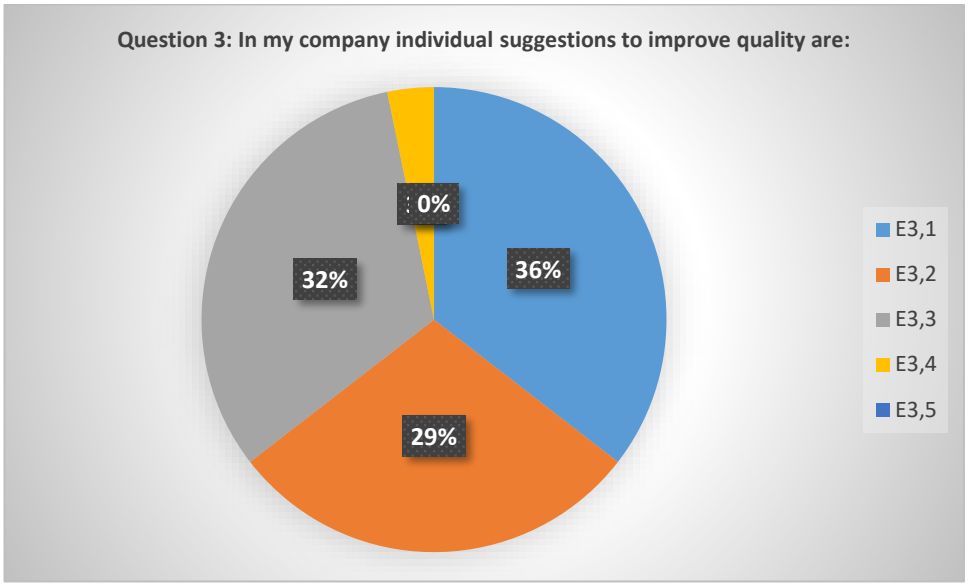
Question 1		%
E1,1	8	25,81
E1,2	9	29,03
E1,3	13	41,94
E1,4	1	3,23
	31	100,00



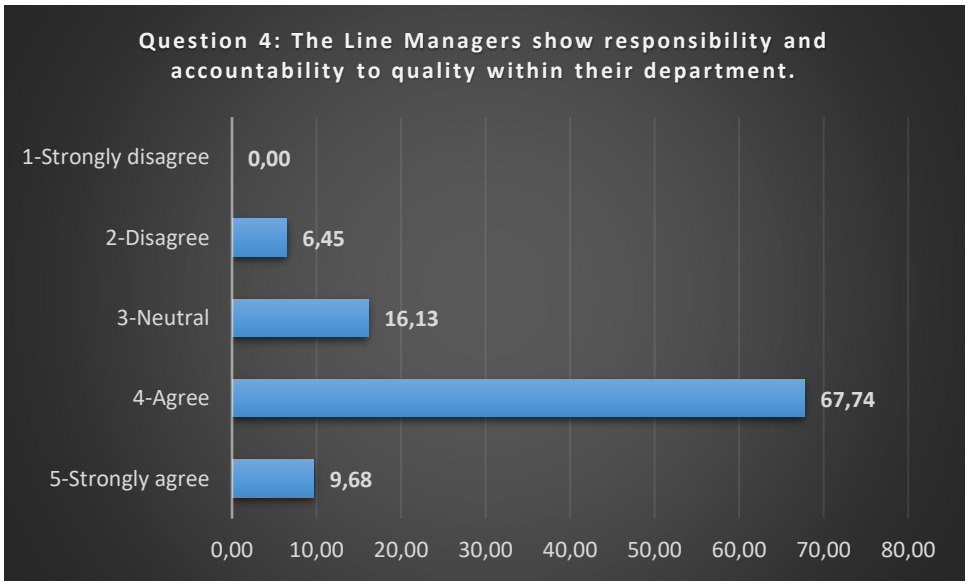
Question 2		%
E2,1	7	22,58
E2,2	11	35,48
E2,3	1	3,23
E2,4	11	35,48
E2,5	1	3,23
E2,6	0	0,00
	31	100,00



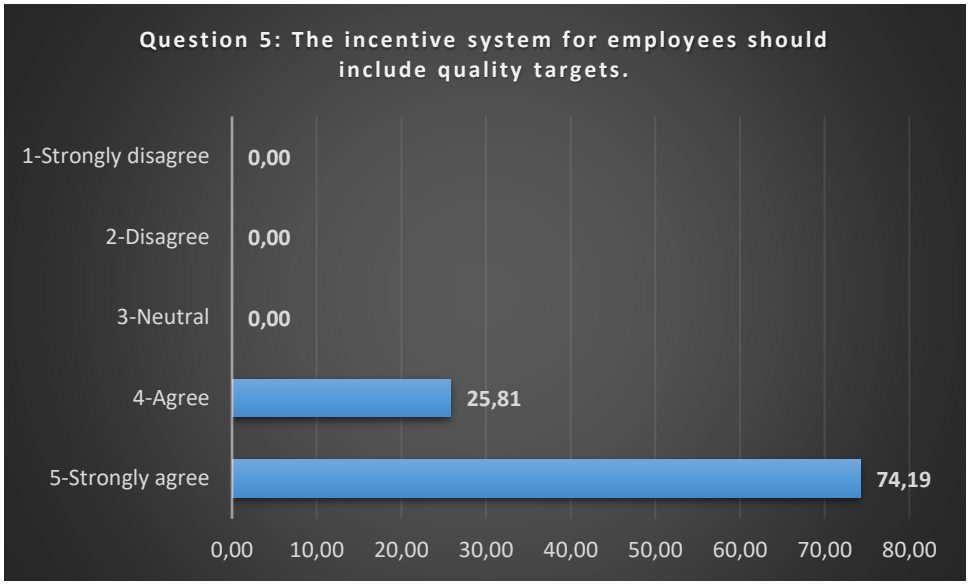
Question 3		%
E3,1	11	35,48
E3,2	9	29,03
E3,3	10	32,26
E3,4	1	3,23
E3,5	0	0,00
	31	100,00



Question 4		%
5-Strongly agree	3	9,68
4-Agree	21	67,74
3-Neutral	5	16,13
2-Disagree	2	6,45
1-Strongly disagree	0	0,00
	31	100,00



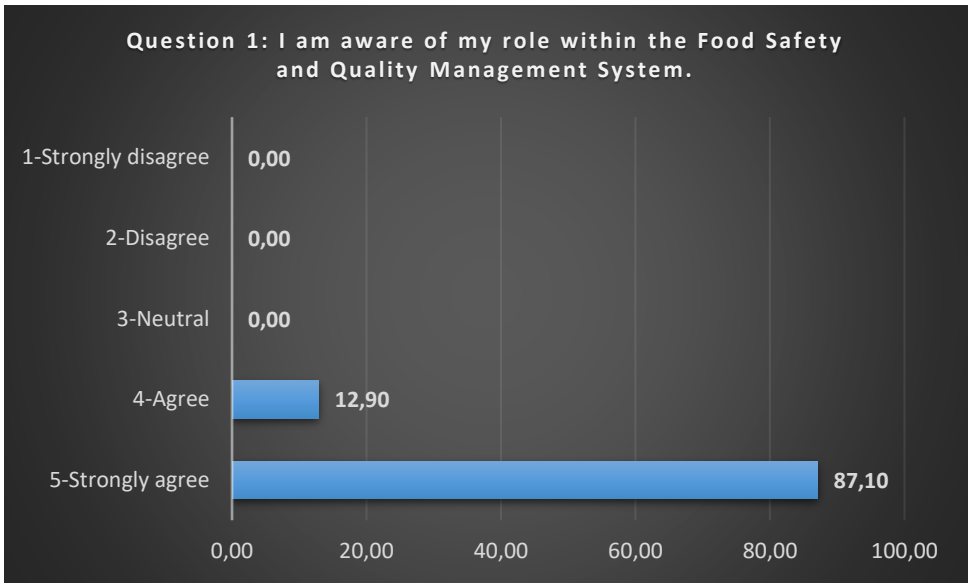
Question 5		%
5-Strongly agree	23	74,19
4-Agree	8	25,81
3-Neutral	0	0,00
2-Disagree	0	0,00
1-Strongly disagree	0	0,00
	31	



SECTION F: Staff training and competency

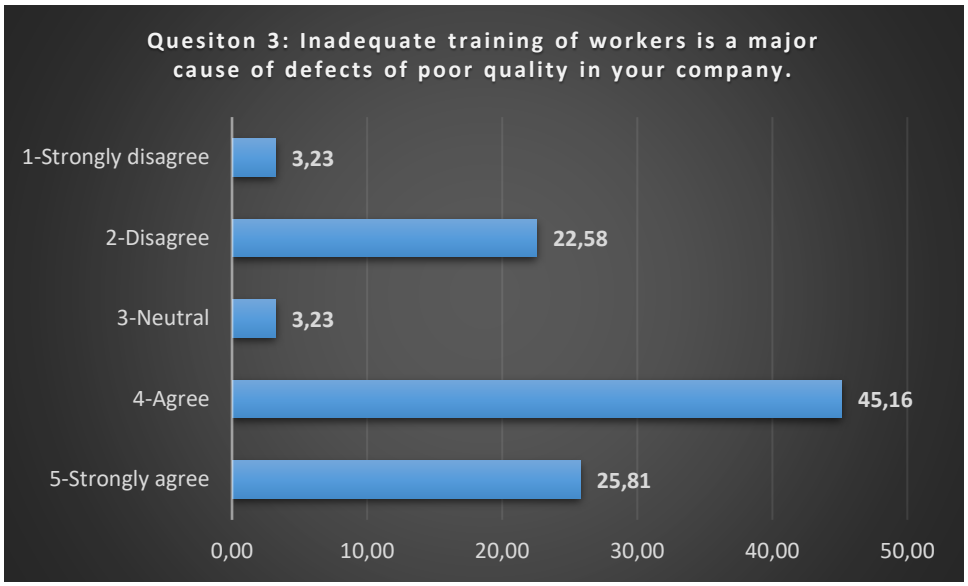
	Section F: STAFF TRAINING AND COMPETENCY				
Question	1	2	3	4	5
	Question 1	**Question 2**	**Question 3**	**Question 4**	**Question 5**
1	5-Strongly agree	5-Strongly agree	4-Agree	4-Agree	5-Strongly agree
2	5-Strongly agree	5-Strongly agree	4-Agree	5-Strongly agree	5-Strongly agree
3	4-Agree	4-Agree	4-Agree	4-Agree	5-Strongly agree
4	5-Strongly agree	4-Agree	5-Strongly agree	5-Strongly agree	5-Strongly agree
5	5-Strongly agree	4-Agree	4-Agree	4-Agree	5-Strongly agree
6	4-Agree	3-Neutral	4-Agree	4-Agree	5-Strongly agree
7	5-Strongly agree	4-Agree	2-Disagree	5-Strongly agree	5-Strongly agree
8	5-Strongly agree	3-Neutral	2-Disagree	5-Strongly agree	5-Strongly agree
9	4-Agree	4-Agree	4-Agree	5-Strongly agree	5-Strongly agree
10	5-Strongly agree	5-Strongly agree	4-Agree	5-Strongly agree	5-Strongly agree
11	5-Strongly agree	3-Neutral	4-Agree	5-Strongly agree	5-Strongly agree
12	5-Strongly agree	3-Neutral	5-Strongly agree	5-Strongly agree	5-Strongly agree
13	5-Strongly agree	4-Agree	4-Agree	4-Agree	5-Strongly agree
14	5-Strongly agree	5-Strongly agree	5-Strongly agree	4-Agree	5-Strongly agree
15	5-Strongly agree	4-Agree	1-Strongly disagree	4-Agree	5-Strongly agree
16	5-Strongly agree	4-Agree	4-Agree	5-Strongly agree	5-Strongly agree
17	5-Strongly agree	5-Strongly agree	5-Strongly agree	5-Strongly agree	5-Strongly agree
18	4-Agree	3-Neutral	5-Strongly agree	5-Strongly agree	5-Strongly agree
19	5-Strongly agree	4-Agree	2-Disagree	2-Disagree	5-Strongly agree
20	5-Strongly agree	5-Strongly agree	4-Agree	5-Strongly agree	5-Strongly agree
21	5-Strongly agree	5-Strongly agree	3-Neutral	5-Strongly agree	4-Agree
22	5-Strongly agree	4-Agree	2-Disagree	5-Strongly agree	5-Strongly agree
23	5-Strongly agree	2-Disagree	2-Disagree		5-Strongly agree
24	5-Strongly agree	5-Strongly agree	5-Strongly agree	5-Strongly agree	5-Strongly agree
25	5-Strongly agree	5-Strongly agree	4-Agree	4-Agree	5-Strongly agree
26	5-Strongly agree	4-Agree	5-Strongly agree	5-Strongly agree	5-Strongly agree
27	5-Strongly agree	2-Disagree	5-Strongly agree	5-Strongly agree	5-Strongly agree
28	5-Strongly agree	5-Strongly agree	4-Agree	4-Agree	4-Agree
29	5-Strongly agree	4-Agree	4-Agree	5-Strongly agree	4-Agree
30	5-Strongly agree	4-Agree	2-Disagree	4-Agree	5-Strongly agree
31	5-Strongly agree	5-Strongly agree	2-Disagree	5-Strongly agree	5-Strongly agree

Question 1		%
5-Strongly agree	27	87,10
4-Agree	4	12,90
3-Neutral	0	0,00
2-Disagree	0	0,00
1-Strongly disagree	0	0,00
	31	100,00

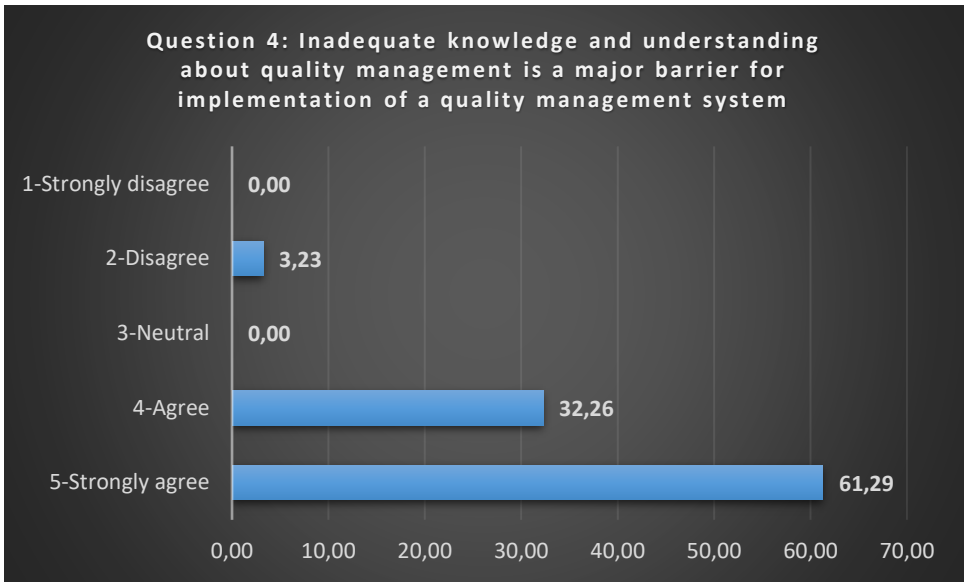


Question 2		%
5-Strongly agree	11	35,48
4-Agree	13	41,94
3-Neutral	5	16,13
2-Disagree	2	6,45
1-Strongly disagree	0	0,00
	31	100,00

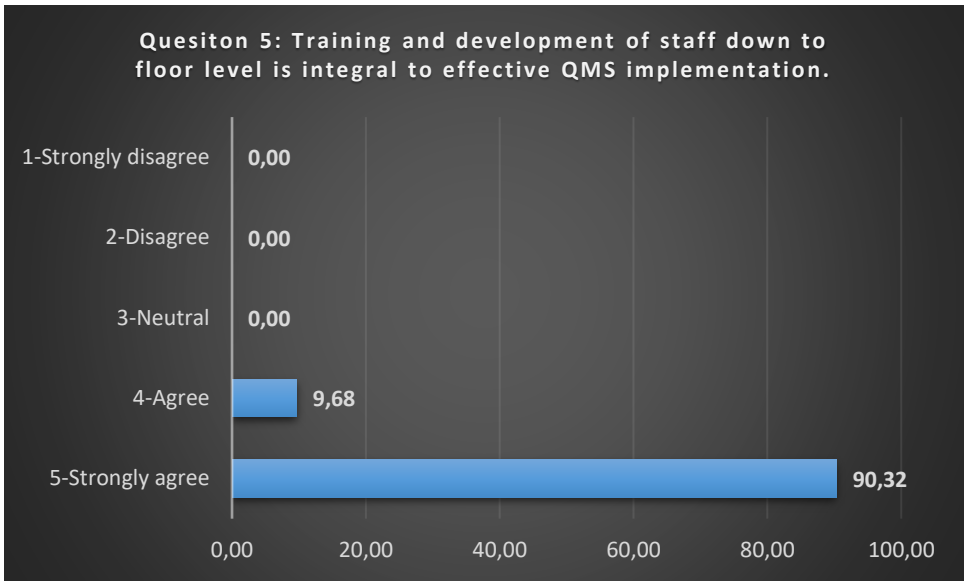
Question 3		%
5-Strongly agree	8	25,81
4-Agree	14	45,16
3-Neutral	1	3,23
2-Disagree	7	22,58
1-Strongly disagree	1	3,23
	31	100,00



Question 4		%
5-Strongly agree	19	61,29
4-Agree	10	32,26
3-Neutral	0	0,00
2-Disagree	1	3,23
1-Strongly disagree	0	0,00
No comments	1	3,23
	31	100,00



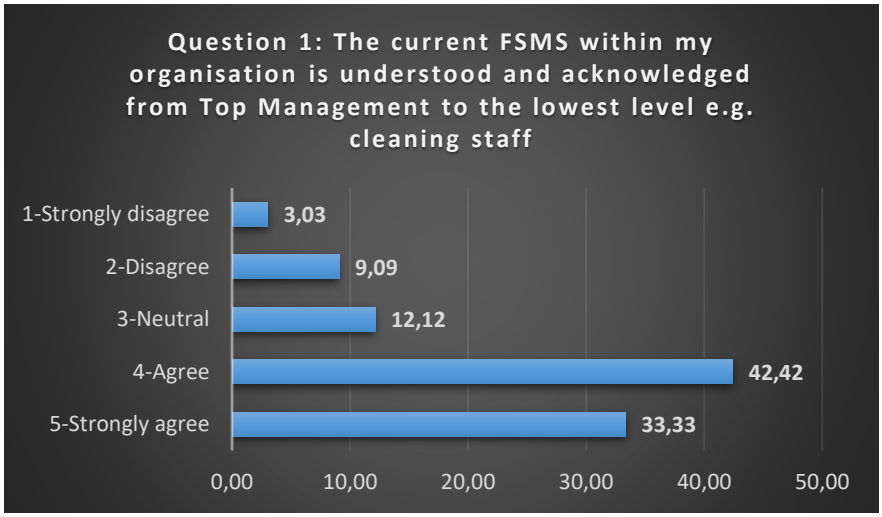
Question 5		%
5-Strongly agree	28	90,32
4-Agree	3	9,68
3-Neutral	0	0,00
2-Disagree	0	0,00
1-Strongly disagree	0	0,00
	31	100,00



SECTION G: Management commitment and communication

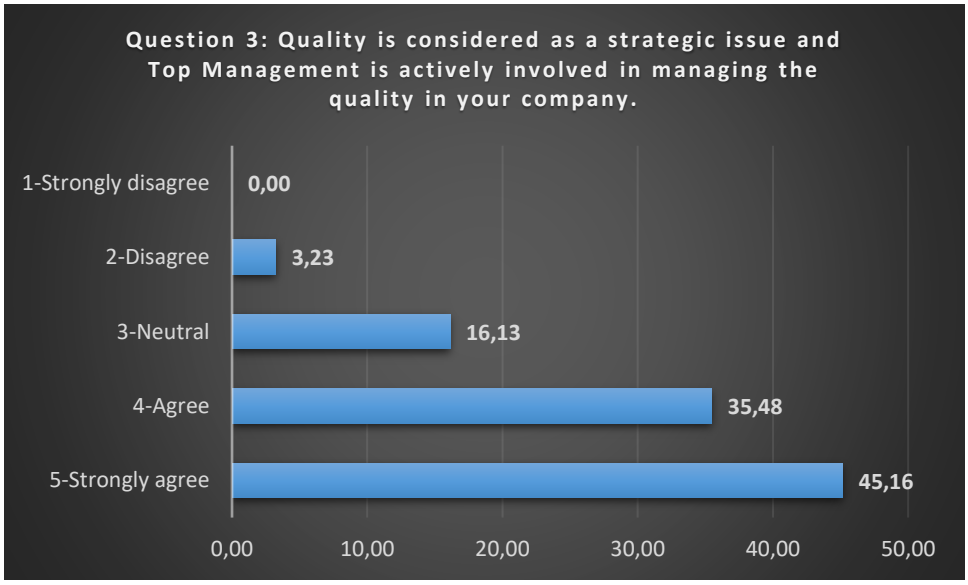
	Section G: TOP MANAGEMENT / MANAGEMENT COMMITMENT AND COMMUNICATION				
Question	1	2	3	4	5
	Question 1	**Question 2**	**Question 3**	**Question 4**	**Question 5**
1	5-Strongly agree	5-Strongly agree	3-Neutral	4-Agree	4-Agree
2	5-Strongly agree	5-Strongly agree	3-Neutral	3-Neutral	3-Neutral
3	4-Agree	5-Strongly agree	5-Strongly agree	4-Agree	4-Agree
4	3-Neutral	4-Agree	5-Strongly agree	4-Agree	4-Agree
5	5-Strongly agree	2-Disagree	5-Strongly agree	5-Strongly agree	5-Strongly agree
6	3-Neutral	4-Agree	4-Agree	4-Agree	3-Neutral
7	3-Neutral	4-Agree	2-Disagree	2-Disagree	3-Neutral
8	2-Disagree	4-Agree	5-Strongly agree	4-Agree	5-Strongly agree
9	4-Agree	2-Disagree	4-Agree	4-Agree	3-Neutral
10	5-Strongly agree	5-Strongly agree	5-Strongly agree	4-Agree	4-Agree
11	4-Agree	5-Strongly agree	3-Neutral	4-Agree	4-Agree
12	4-Agree	5-Strongly agree	5-Strongly agree	4-Agree	4-Agree
13	4-Agree	5-Strongly agree	5-Strongly agree	4-Agree	4-Agree
14	5-Strongly agree	1-Strongly disagree	5-Strongly agree	5-Strongly agree	5-Strongly agree
15	4-Agree	4-Agree	5-Strongly agree	5-Strongly agree	3-Neutral
16	4-Agree	4-Agree	5-Strongly agree	2-Disagree	4-Agree
17	4-Agree	5-Strongly agree	4-Agree	4-Agree	5-Strongly agree
18	4-Agree	5-Strongly agree	3-Neutral	2-Disagree	3-Neutral
19	4-Agree	3-Neutral	4-Agree	4-Agree	4-Agree
20	4-Agree	2-Disagree	4-Agree	4-Agree	4-Agree
21	4-Agree	5-Strongly agree	4-Agree	2-Disagree	3-Neutral
22	5-Strongly agree	5-Strongly agree	5-Strongly agree	5-Strongly agree	4-Agree
23	4-Agree	4-Agree	4-Agree	4-Agree	4-Agree
24	5-Strongly agree	5-Strongly agree	5-Strongly agree	4-Agree	5-Strongly agree
25	5-Strongly agree	4-Agree	4-Agree	4-Agree	3-Neutral
26	5-Strongly agree	5-Strongly agree	5-Strongly agree	5-Strongly agree	5-Strongly agree
27	1-Strongly disagree	3-Neutral	3-Neutral	3-Neutral	4-Agree
28	5-Strongly agree	5-Strongly agree	4-Agree	4-Agree	4-Agree
29	3-Neutral	4-Agree	4-Agree	4-Agree	4-Agree
30	4-Agree	4-Agree	4-Agree	4-Agree	4-Agree
31	5-Strongly agree	5-Strongly agree	5-Strongly agree	4-Agree	4-Agree

Question 1		%
5-Strongly agree	11	33,33
4-Agree	14	42,42
3-Neutral	4	12,12
2-Disagree	3	9,09
1-Strongly disagree	1	3,03
	33	100,00

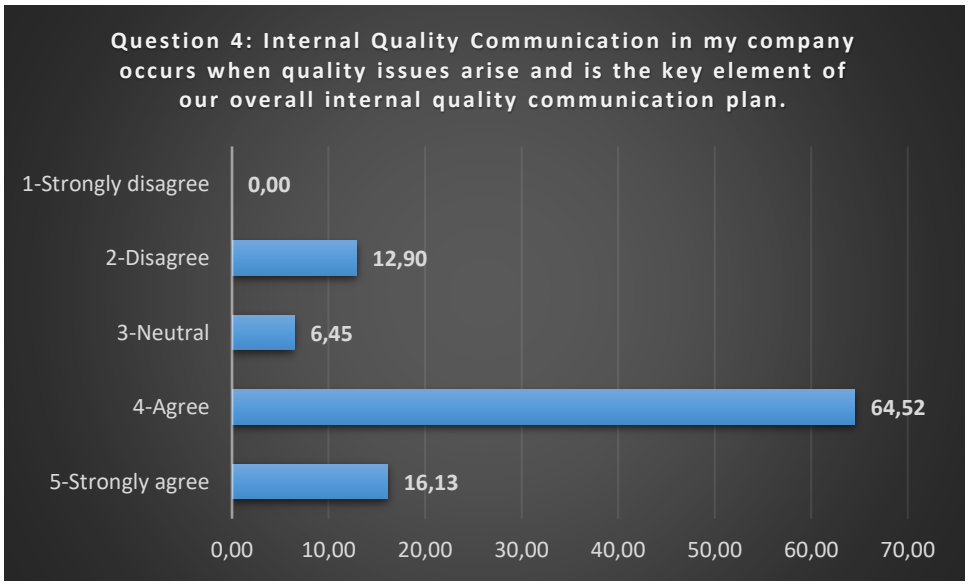


Question 2		%
5-Strongly agree	15	48,39
4-Agree	10	32,26
3-Neutral	2	6,45
2-Disagree	3	9,68
1-Strongly disagree	1	3,23
	31	100,00

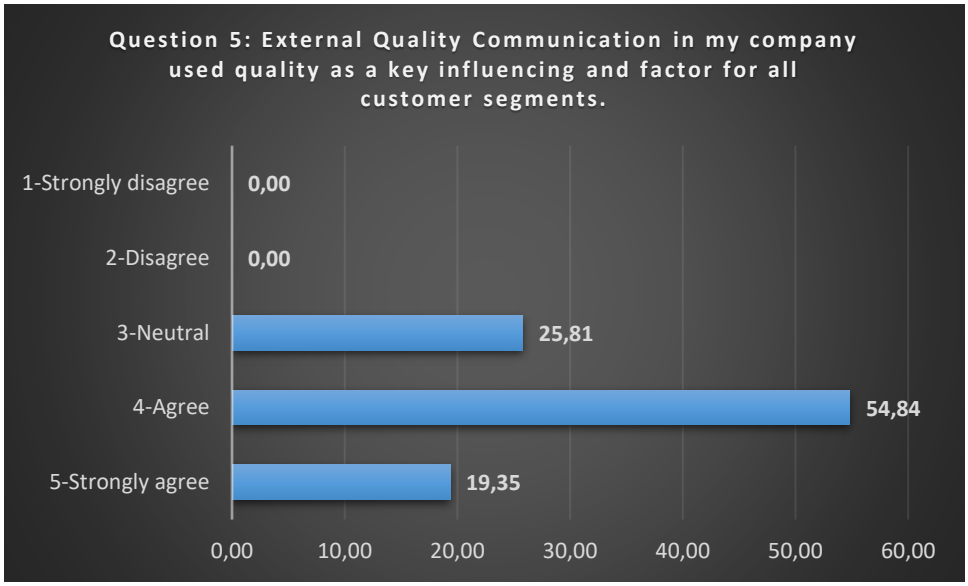
Question 3		%
5-Strongly agree	14	45,16
4-Agree	11	35,48
3-Neutral	5	16,13
2-Disagree	1	3,23
1-Strongly disagree	0	0,00
	31	100,00



Question 4		%
5-Strongly agree	5	16,13
4-Agree	20	64,52
3-Neutral	2	6,45
2-Disagree	4	12,90
1-Strongly disagree	0	0,00
	31	100,00



Question 5		%
5-Strongly agree	6	19,35
4-Agree	17	54,84
3-Neutral	8	25,81
2-Disagree	0	0,00
1-Strongly disagree	0	0,00
	31	100,00



SECTION H: Customer service/complaints

	Section H: CUSTOMER SERVICE / CUSTOMER COMPLAINTS		
Question	1	2	3
	Question 1	**Question 2**	**Question 3**
1	5-Strongly agree	5-Strongly agree	5-Strongly agree
2	5-Strongly agree	5-Strongly agree	5-Strongly agree
3	4-Agree	4-Agree	5-Strongly agree
4	5-Strongly agree	5-Strongly agree	5-Strongly agree
5	4-Agree	5-Strongly agree	4-Agree
6	4-Agree	4-Agree	4-Agree
7	4-Agree	5-Strongly agree	4-Agree
8	5-Strongly agree	5-Strongly agree	5-Strongly agree
9	5-Strongly agree	5-Strongly agree	5-Strongly agree
10	5-Strongly agree	5-Strongly agree	5-Strongly agree
11	4-Agree	3-Neutral	2-Disagree
12	5-Strongly agree	5-Strongly agree	5-Strongly agree
13	4-Agree	5-Strongly agree	5-Strongly agree
14	5-Strongly agree	5-Strongly agree	5-Strongly agree
15	5-Strongly agree	5-Strongly agree	5-Strongly agree
16	4-Agree	5-Strongly agree	5-Strongly agree
17	5-Strongly agree	5-Strongly agree	4-Agree
18	3-Neutral	2-Disagree	2-Disagree
19	4-Agree	5-Strongly agree	3-Neutral
20	4-Agree	5-Strongly agree	5-Strongly agree
21	5-Strongly agree	5-Strongly agree	5-Strongly agree
22	5-Strongly agree	5-Strongly agree	5-Strongly agree
23	4-Agree	4-Agree	4-Agree
24	4-Agree	5-Strongly agree	5-Strongly agree
25	4-Agree	5-Strongly agree	5-Strongly agree
26	4-Agree	5-Strongly agree	5-Strongly agree
27	4-Agree	5-Strongly agree	5-Strongly agree
28	4-Agree	5-Strongly agree	5-Strongly agree
29	5-Strongly agree	5-Strongly agree	5-Strongly agree
30	4-Agree	5-Strongly agree	5-Strongly agree
31	4-Agree	5-Strongly agree	5-Strongly agree

Question 1		%
5-Strongly agree	13	41,94
4-Agree	17	54,84
3-Neutral	1	3,23
2-Disagree	0	0,00
1-Strongly disagree	0	0,00
	31	100,00

Question 2		%
5-Strongly agree	26	83,87
4-Agree	3	9,68
3-Neutral	1	3,23
2-Disagree	1	3,23
1-Strongly disagree	0	0,00
	31	100,00

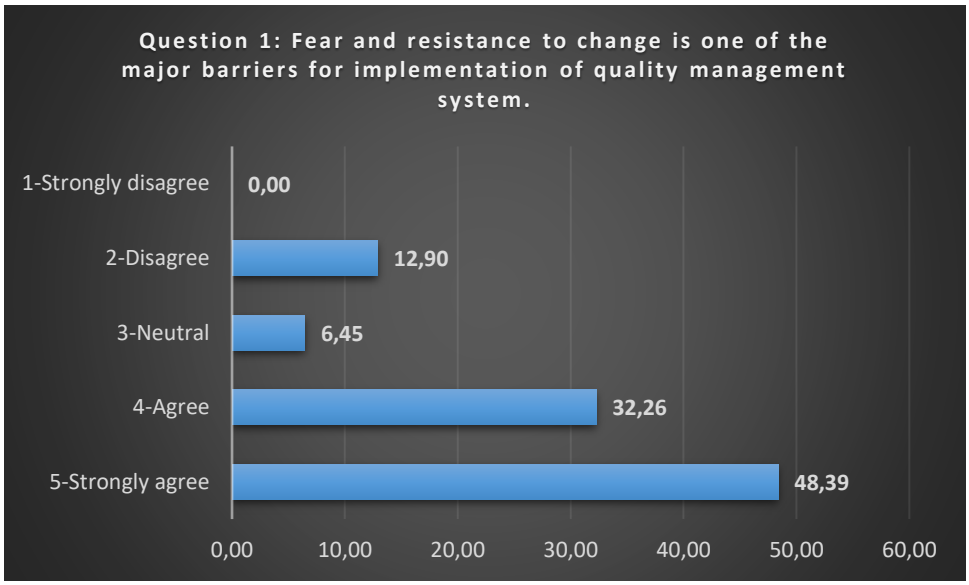
Question 3		%
5-Strongly agree	23	74,19
4-Agree	5	16,13
3-Neutral	1	3,23
2-Disagree	2	6,45
1-Strongly disagree	0	0,00
	31	100,00


Question 3: The organisation deems it unacceptable to deliver non-conforming product to customers even at the cost of losing an order.
1-Strongly disagree
2-Disagree
3-Neutral
4-Agree
5-Strongly agree
0,00
10,00
20,00
30,00
40,00
50,00
60,00
70,00
80,00

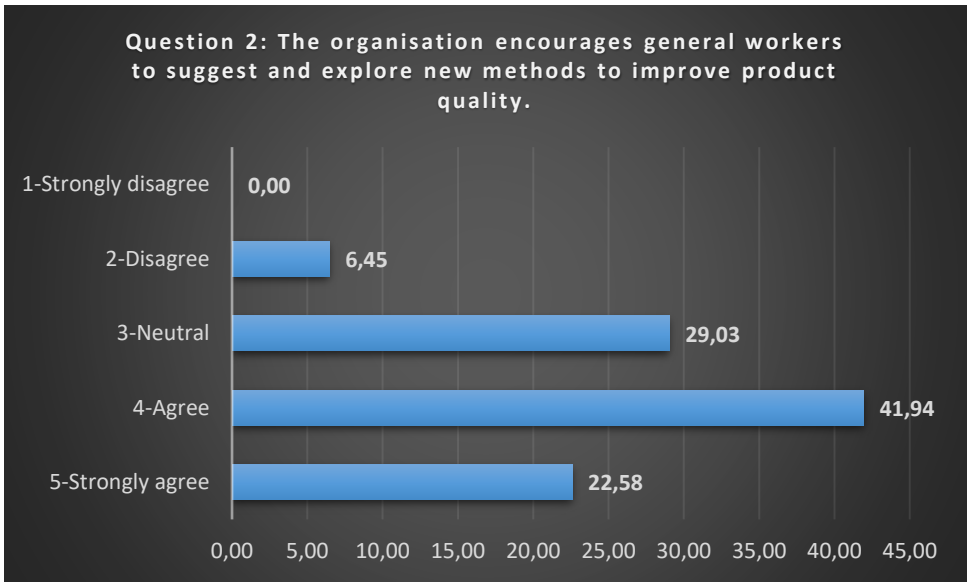
SECTION I: Staff behaviour/cultural behaviour

	Section I: COMPETENCY: STAFF BEHAVIOUR / CULTURAL BEHAVIOUR			
Question	1	2	3	
	Question 1	**Question 2**	**Question 3**	
1	4-Agree	3-Neutral	4-Agree	
2	5-Strongly agree	5-Strongly agree	5-Strongly agree	
3	5-Strongly agree	3-Neutral	5-Strongly agree	
4	4-Agree	4-Agree	5-Strongly agree	
5	5-Strongly agree	4-Agree	5-Strongly agree	
6	5-Strongly agree	4-Agree	5-Strongly agree	
7	2-Disagree	5-Strongly agree	5-Strongly agree	
8	5-Strongly agree	3-Neutral	5-Strongly agree	
9	4-Agree	4-Agree	5-Strongly agree	
10	5-Strongly agree	3-Neutral	5-Strongly agree	
11	5-Strongly agree	2-Disagree	4-Agree	
12	5-Strongly agree	4-Agree	4-Agree	
13	3-Neutral	4-Agree	5-Strongly agree	
14	3-Neutral	5-Strongly agree	5-Strongly agree	
15	4-Agree	5-Strongly agree	5-Strongly agree	
16	4-Agree	4-Agree	5-Strongly agree	
17	5-Strongly agree	3-Neutral	5-Strongly agree	
18	4-Agree	4-Agree	5-Strongly agree	
19	4-Agree	3-Neutral	4-Agree	
20	2-Disagree	4-Agree	5-Strongly agree	
21	2-Disagree	5-Strongly agree	3-Neutral	
22	5-Strongly agree	4-Agree	5-Strongly agree	
23	4-Agree	3-Neutral	4-Agree	
24	5-Strongly agree	5-Strongly agree	5-Strongly agree	
25	4-Agree	4-Agree	5-Strongly agree	
26	5-Strongly agree	4-Agree	5-Strongly agree	
27	5-Strongly agree	3-Neutral	5-Strongly agree	
28	5-Strongly agree	2-Disagree	5-Strongly agree	
29	2-Disagree	3-Neutral	3-Neutral	
30	4-Agree	4-Agree	4-Agree	
31	5-Strongly agree	5-Strongly agree	5-Strongly agree	

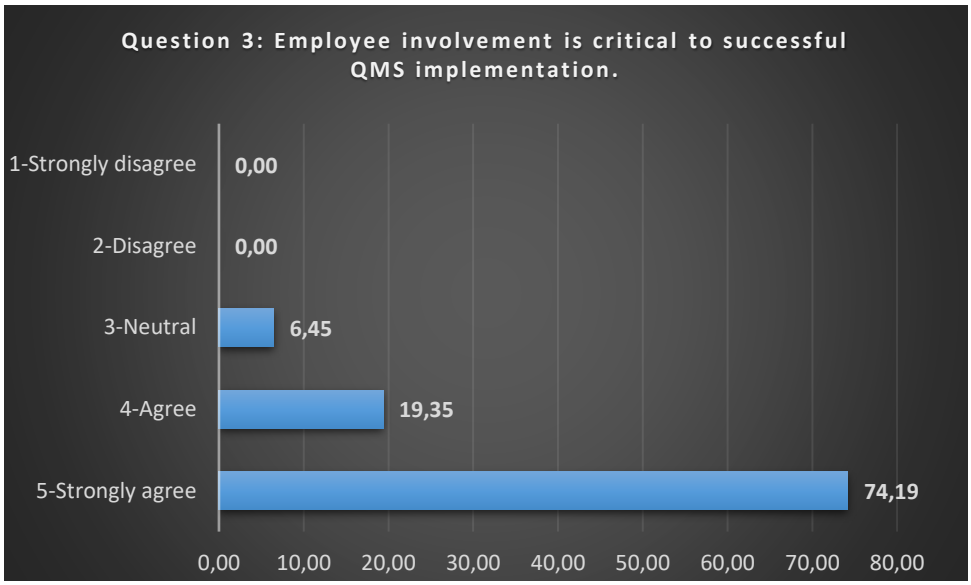
Question 1		%
5-Strongly agree	15,00	48,39
4-Agree	10,00	32,26
3-Neutral	2,00	6,45
2-Disagree	4,00	12,90
1-Strongly disagree	0,00	0,00
	31,00	100,00



Question 2		%
5-Strongly agree	7	22,58
4-Agree	13	41,94
3-Neutral	9	29,03
2-Disagree	2	6,45
1-Strongly disagree	0	0,00
	31	100,00



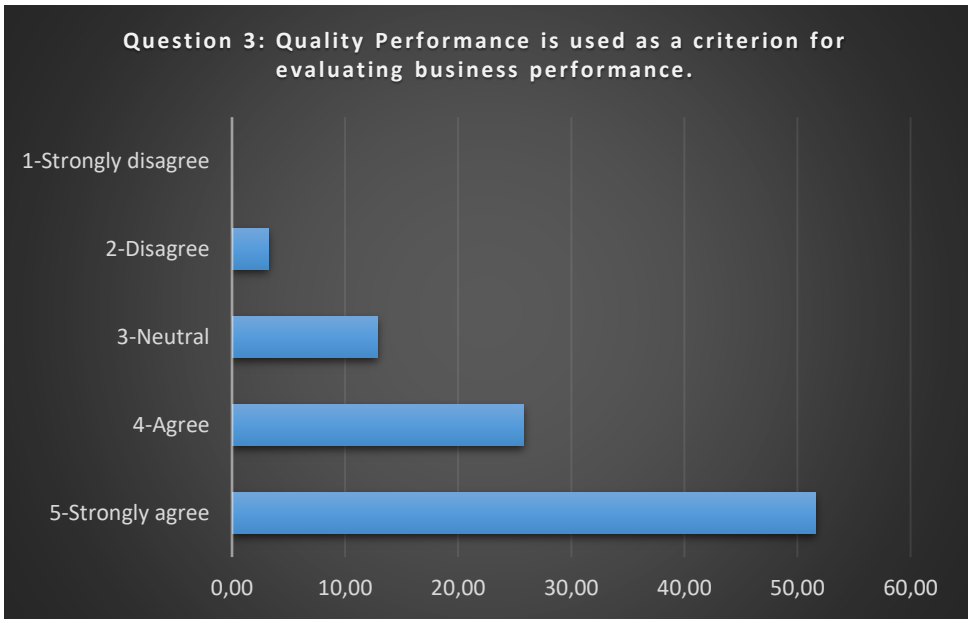
Question 3		%
5-Strongly agree	23	74,19
4-Agree	6	19,35
3-Neutral	2	6,45
2-Disagree	0	0,00
1-Strongly disagree	0	0,00
	31	100,00


Question 3: Employee involvement is critical to successful QMS implementation.
1-Strongly disagree
0,00
2-Disagree
0,00
3-Neutral
6,45
4-Agree
19,35
5-Strongly agree
74,19
0,00
10,00
20,00
30,00
40,00
50,00
60,00
70,00
80,00

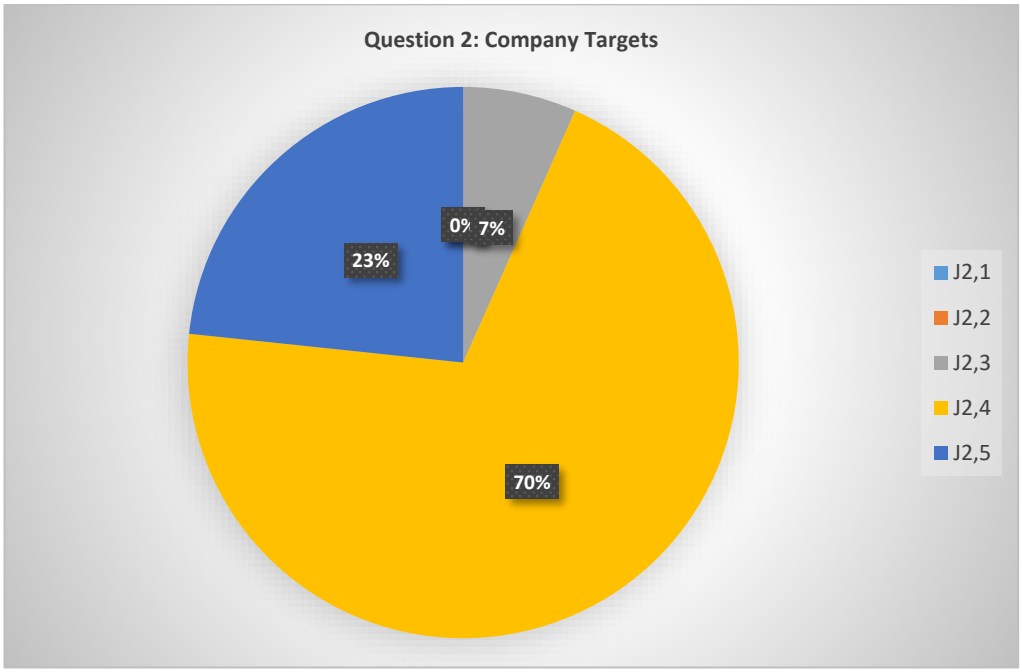
SECTION J: Performance measurement and cost of quality

	Section J: PERFORMANCE MEASUREMENT AND COST OF QUALITY		
Question	1	2	3
	Question 1	**Question 2**	**Question 3**
1	3-Neutral	J2,4	J3,2
2	5-Strongly agree	J2,4	
3	4-Agree	J2,4	J3,3
4	4-Agree	J2,4	J3,4
5	5-Strongly agree	J2,4	J3,3
6	3-Neutral	J2,4	J3,2
7	4-Agree	J2,3	J3,3
8	5-Strongly agree	J2,4	J3,4
9	4-Agree	J2,4	J3,3
10	5-Strongly agree	J2,4	J3,4
11	3-Neutral	J2,4	J3,4
12	5-Strongly agree	J2,4	J3,3
13	5-Strongly agree	J2,4	J3,3
14	5-Strongly agree	J2,4	J3,3
15	5-Strongly agree	J2,4	J3,1
16	5-Strongly agree	J2,5	J3,5
17	5-Strongly agree	J2,5	J3,3
18	2-Disagree	J2,4	J3,3
19	3-Neutral	J2,4	J3,2
20	5-Strongly agree	J2,4	J3,3
21	5-Strongly agree	J2,5	J3,3
22	5-Strongly agree	J2,4	J3,3
23		J2,5	J3,2
24	4-Agree	J2,4	J3,3
25	4-Agree	J2,3	J3,3
26	5-Strongly agree	J2,5	J3,4
27	4-Agree	J2,5	J3,3
28	4-Agree	J2,4	J3,1
29			
30	5-Strongly agree	J2,4	J3,4
31	5-Strongly agree	J2,5	J3,5

Question 1		%
5-Strongly agree	16,00	51,61
4-Agree	8,00	25,81
3-Neutral	4,00	12,90
2-Disagree	1,00	3,23
1-Strongly disagree	0,00	0,00
No comments	2	6,45
	31,00	100,00



Question 2		%
J2,1	0,00	0,00
J2,2	0,00	0,00
J2,3	2,00	6,45
J2,4	21,00	67,74
J2,5	7,00	22,58
No comments	1	3,23
	31,00	100,00



Question 3		%
J3,1	2,00	6,45
J3,2	4,00	12,90
J3,3	15,00	48,39
J3,4	6,00	19,35
J3,5	2,00	6,45
No comments	2,00	6,45
	31,00	100,00